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PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

FALK CORPORATION
MILWAUKEE, WI
WID 006 097 083

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

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EXECUTIVE SUMMARY

PRC Environmental Management, Inc. (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Falk Corporation (Falk) facility in Milwaukee, Milwaukee County, Wisconsin. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified. In addition, a completed U.S. Environmental Protection Agency (EPA) Preliminary Assessment Form (EPA Form 2070-12) is included in Attachment A to assist in prioritizing RCRA facilities for corrective action.

The Falk facility manufactures gears, gear drives, and flexible couplings for mechanical and hydropower transmission components. The facility consists of seven main areas: a foundry, machine shops, welding shop, heat treat shop, melt shop, storage, and the power house/boiler room. The facility generates and manages the following waste streams: (1) waste enamel paint and xylene (F003); (2) waste copper cyanide (P030); (3) spent mineral spirits (D001); (4) spent mineral spirits and 1,1,1-trichloroethane (D001 and F001); (5) used paint booth filters (nonhazardous); (6) spent refractory bricks (nonhazardous); (7) waste lapping compound (nonhazardous); (8) scrap metal chips and turnings (nonhazardous); (9) scrap metal pieces (nonhazardous); (10) waste soldering fluid (nonhazardous); (11) waste oil (nonhazardous); (12) waste shot blast (nonhazardous); (13) waste foundry sand and debris (nonhazardous); (14) waste slag and skulls (nonhazardous); (15) waste dry collector dust (nonhazardous); (16) waste wet collector dust (nonhazardous); (17) waste risers and gate cuttings (nonhazardous); (18) waste foundry sand washings (nonhazardous); (19) wastewater treatment plant sludge (nonhazardous); and (20) incinerator ash (nonhazardous).

The facility has operated at its current location since 1892. The facility occupies about 51 acres in a mixed-use area and employs about 1,300 people. The facility currently operates as a large-quantity generator storing hazardous waste for less than 90 days. Prior to 1989, the facility was regulated as a treatment, storage, or disposal facility.

In 1970, Falk was purchased by Sundstrand Corporation (Sundstrand) in Rockford, Illinois and is a wholly-owned subsidiary of Sundstrand.

The PA/VSI identified the following twelve SWMUs and one AOC at the facility:

Solid Waste Management Units

1. Oil Storage Area
2. Metal Chip Storage Area
3. Solid Waste Refuse Dumpster and Compactor
4. Scrap Metal Storage Area
5. Shot Blast Storage Area
6. Foundry Sand Laundry Area
7. Wastewater Treatment Plant
8. Foundry Sand Tailings Area
9. Foundry Area (Foundry)
10. Former Incinerator Area (Incinerator)
11. Dry Dust Collectors (Dry DC)
12. Wet Dust Collectors (Wet DC)

Areas of Concern

1. Former Fuel Underground Storage Tanks (UST)

At the time of PRC's inspection, the facility was not in operation due to its annual 2-week plant shutdown. A secondary containment berm surrounds the perimeter of the entire facility. SWMUs 1 through 7 and 10 through 12 have a low potential for release to environmental media because the SWMUs have adequate containment. SWMU 1 underwent RCRA closure in 1988, which was approved by Wisconsin Department of Natural Resources in 1989. SWMU 10 is inactive and was removed by the facility in 1985.

SWMUs 8 and 9 have a moderate potential for release to an environmental media because waste foundry sand and debris is tracked across the facility. Therefore, there is inadequate containment for these two SWMUs, and thus is a potential for the release and off-site transportation of airborne dust.

The facility formerly had two fuel underground storage tanks (UST), an 8,000-gallon tank for unleaded gasoline, and a 12,000 gallon tank for leaded gasoline. On December 29, 1986, the piping from the 8,000-gallon unleaded gasoline UST was found to be leaking. The leak was repaired and no other release was detected. On August 17, 1987, the 12,000-gallon UST was removed from the Falk facility. On January 15, 1988, the 8,000-gallon UST was removed from the facility. These Former Fuel USTs (AOC 1) were replaced with one new UST, which is used

for the storage of unleaded gasoline. In 1986, a leak occurred in the piping system for unleaded gasoline UST; and the possibility exists that a release to on-site soils has occurred. On-site soils have not been analyzed for total petroleum hydrocarbons (TPH) or other compounds such as benzene, toluene, ethyl benzene, and xylene (BTEX). The potential for release to ground water from AOC I is moderate.

The nearest surface water body is the Menomonee River, which is immediately south and east of the facility. The Menomonee River is used for recreational and industrial water purposes. The nearest wetland is 1.7 miles northeast of the facility. Other sensitive environments are more than 5 miles away from the facility.

The nearest residence is about 0.2 miles north of the facility. Ground water within 2.5 miles of the facility is not used for drinking water.

PRC recommends that Falk take action to minimize the release of foundry waste and dust from SWMUs 8 and 9 across the facility and to potential off-site receptor areas. Falk also should collect on-site soil samples from the area where the Former Fuel USTs were located, to determine the extent of TPH and BTEX contamination.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. C05087 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has usually exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release of hazardous waste or constituents to the environment has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where a strong possibility exists that such a release might occur in the future.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff; inspecting the entire facility to identify all SWMUs and AOCs; photographing all visible SWMUs; identifying evidence of releases; making a preliminary selection of potential sampling parameters and locations, if needed; and obtaining additional information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Falk Corporation (Falk) facility (EPA Identification No. WID 006 097 083) in Milwaukee, Milwaukee County, Wisconsin. The PA was completed on July 21, 1992. PRC gathered and reviewed information from the Wisconsin Department of Natural Resources (WDNR), Federal Emergency Management Agency (FEMA), U.S. Geological Survey (USGS), U.S. Department of Agriculture (USDA), Wisconsin Wetlands Inventory (WWI), Wisconsin Geological Natural History Survey (WGNHS) and from EPA Region 5 RCRA files. The VSI was conducted on July 24, 1992. It included interviews with facility

representatives and a walk-through inspection of the facility. PRC identified twelve SWMUs and one AOC at the facility.

PRC completed EPA Form 2070-12 using information gathered during the PA/VSI. This form is included as Attachment A. The VSI is summarized and eighteen inspection photographs are included in Attachment B. Field notes from the VSI are included in Attachment C.

2.0 FACILITY DESCRIPTION

This section describes the facility's location; past and present operations; waste generating processes and waste management practices; a history of documented releases; regulatory history; environmental setting; and receptors.

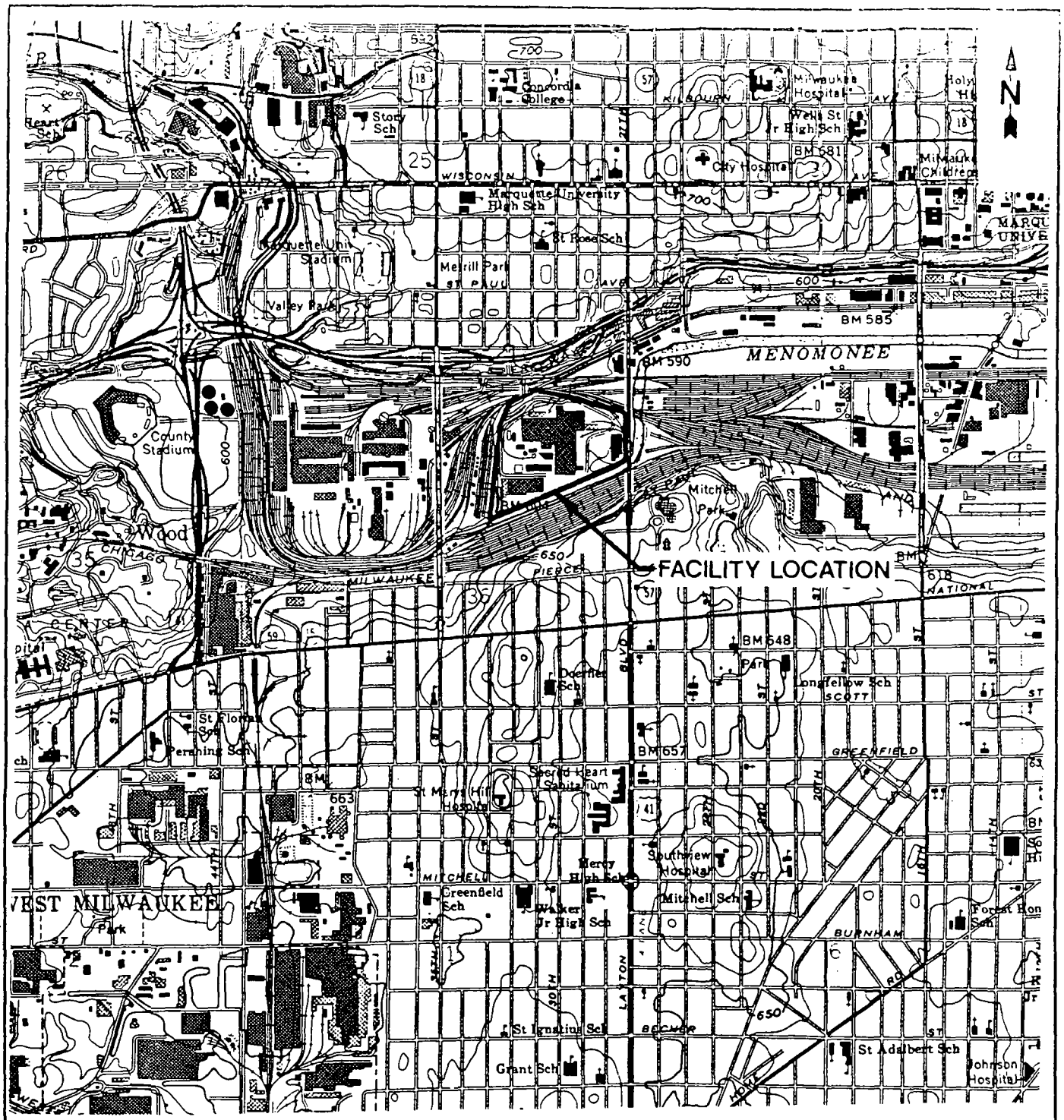
2.1 FACILITY LOCATION

The Falk facility is located at 3001 W. Canal Street in Milwaukee, Milwaukee County, Wisconsin. Figure 1 shows the location of the facility in relation to the surrounding topographic features (latitude 43°01'46" N and longitude 87°57'04" W). The facility occupies about 51 acres in a mixed-use area.

The facility is bordered on the north by West Canal Street and Interstate Highway 94; on the west by a vacant lot; on the south by the Menomonee River; and on the east by the Soo Line Railroad Depot, Thiele Tanning Company (tannery), and A.L. Gebhardt Tanning Company (tannery).

2.2 FACILITY OPERATIONS

The Falk facility manufactures gears, gear drives, and flexible couplings for mechanical and hydropower transmission components. The facility consists of seven main areas: a foundry, machine shops, welding shop, heat treat shop, melt shop, storage, and the power house/boiler room. Foundry operations include mold and core making using sodium silicate sand and binders; steel metal melting and pouring; sand shakeout of molds and cores; finishing; cleaning; cutting; and welding. Machining operations include the grinding and cutting of the steel castings into manufactured products. The welding operation cuts, welds, and cleans steel castings into rough shaped metal components. The heat treat operation anneals (heat treats) steel castings in batch ovens using quench oil. The melting operation uses two electric arc furnaces to melt steel and recycled scrap steel. All raw materials and finished products are stored in warehouses. The power house/boiler room is used to generate electricity for the entire facility. Raw material used at the facility includes: steel; ferric chromium ore; ferro-manganese metal alloy; nickel ore; manganese ore; cooling and lubricating oils; silica sand; sodium silicate binder; propylene carbonate binder; grease; mineral spirits; lapping compound; soldering fluid with zinc chloride; enamel paints; water; no bake paste resins; xylene; and a mineral spirits and 1,1,1-trichloroethane mixture. Raw



SCALE 1:24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

SCALE 1"=2,000'

QUADRANGLE LOCATION

SOURCE: MODIFIED FROM USGS, MILWAUKEE QUADRANGLE, 1971

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FIGURE 1

FACILITY LOCATION

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materials are stored in drums and other storage containers throughout the facility. Unleaded gasoline and number 6 bunker fuel are stored in underground storage tanks (USTs).

Falk has operated at the facility since 1892 and employs about 1,300 people. The total square footage for the facility under roof is 1,051,528 (Falk, 1990). Parking lots are on the north end of the facility. A secondary containment berm surrounds the entire facility.

Falk has been in continuous operation as a foundry for about 100 years. Since 1970, the facility has been a wholly owned subsidiary of Sundstrand Corporation in Rockford, Illinois. Solid wastes generated from facility operations and the SWMUs where they are managed are discussed in detail in Section 2.3.

2.3 WASTE GENERATION AND MANAGEMENT

The primary waste generating processes at the Falk facility include the following: (1) painting operation; (2) parts heat treating operation; (3) melt shop operation; (4) parts cleaning and washing operation; (5) machining operation; (6) welding operation; (7) equipment oil draining; (8) blasting operation; (9) foundry operation; (10) air emission dust control systems; (11) laundry area; and (12) wastewater treatment plant. In the past the facility had an incineration operation.

Wastes are generated and managed at various locations at the facility. SWMUs and their current status are identified in Table 1. The locations of SWMUs in relation to the facility layout are shown on Figures 2 and 3. Wastes generated at the facility are summarized in Table 2. Facility generation and management of both hazardous and nonhazardous wastes, are discussed below.

Waste enamel paint and xylene (F003) (about 1,110 gallons per year), generated by the parts painting operation, is stored in drums at the Oil Storage Area (SWMU 1), and is transported off site by Safety-Kleen Corporation, of Dolton, Illinois, for recycle or disposal at their Illinois facility (Falk, 1992a).

Waste copper cyanide (P030) (about 10 pounds per year) in a drum, is generated by the heat treat shop and is stored at the Oil Storage Area (OSA) (SWMU 1). Waste copper cyanide has not been transported off site because Falk has not contracted with a disposal facility, however,

TABLE 1

SOLID WASTE MANAGEMENT UNITS

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit[a]	Status
1	Oil Storage Area	Yes	Active; underwent RCRA closure, approved in 1989. Currently regulated for less than 90-day storage of hazardous waste.
2	Metal Chip Storage Area	No	Active; storage of nonhazardous waste
3	Solid Waste Refuse Dumpster and Compactor	No	Active; storage of nonhazardous waste
4	Scrap Metal Storage Area	No	Active; storage of nonhazardous waste
5	Shot Blast Storage Area	No	Active; storage of nonhazardous waste
6	Foundry Sand Laundry Area	No	Active; cleaning of nonhazardous waste
7	Wastewater Treatment Plant	No	Active; storage and treatment of nonhazardous waste
8	Foundry Sand Tailings Area	No	Active; storage of nonhazardous waste
9	Foundry Area	No	Active; storage of nonhazardous waste
10	Former Incinerator Area	No	Inactive; removed in 1985
11	Dry Dust Collectors	No	Active; storage of nonhazardous waste
12	Wet Dust Collectors	No	Active; storage of nonhazardous waste

Note:

[a] A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.

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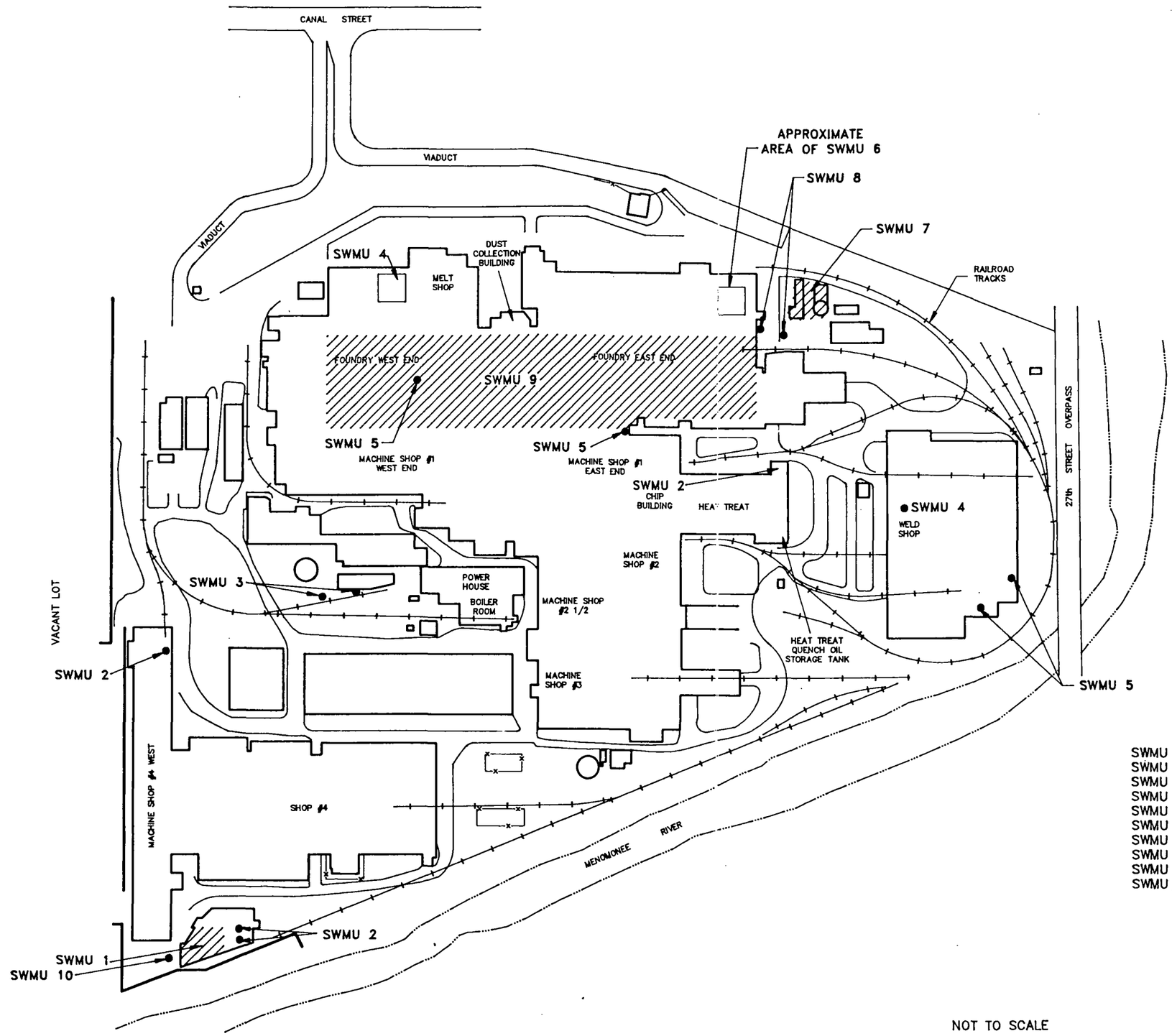
Attachment

A EPA PRELIMINARY ASSESSMENT FORM 2070-12

B VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

C VISUAL SITE INSPECTION FIELD NOTES



LEGEND

SWMU 1	OIL STORAGE AREA
SWMU 2	METAL CHIP STORAGE AREA
SWMU 3	SOLID WASTE REFUSE DUMPSTER AND COMPACTOR
SWMU 4	SCRAP METAL STORAGE AREA
SWMU 5	SHOT BLAST STORAGE AREA
SWMU 6	FOUNDRY SAND LAUNDRY AREA
SWMU 7	WASTEWATER TREATMENT PLANT
SWMU 8	FOUNDRY SAND TAILINGS AREA
SWMU 9	FOUNDRY AREA
SWMU 10	FORMER INCINERATOR AREA

NOT TO SCALE

SOURCE: MODIFIED FROM FALK SKETCH RECEIVED BY PRC ON JULY 24, 1992

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FIGURE 2

FACILITY LAYOUT–SWMUs 1 THROUGH 10

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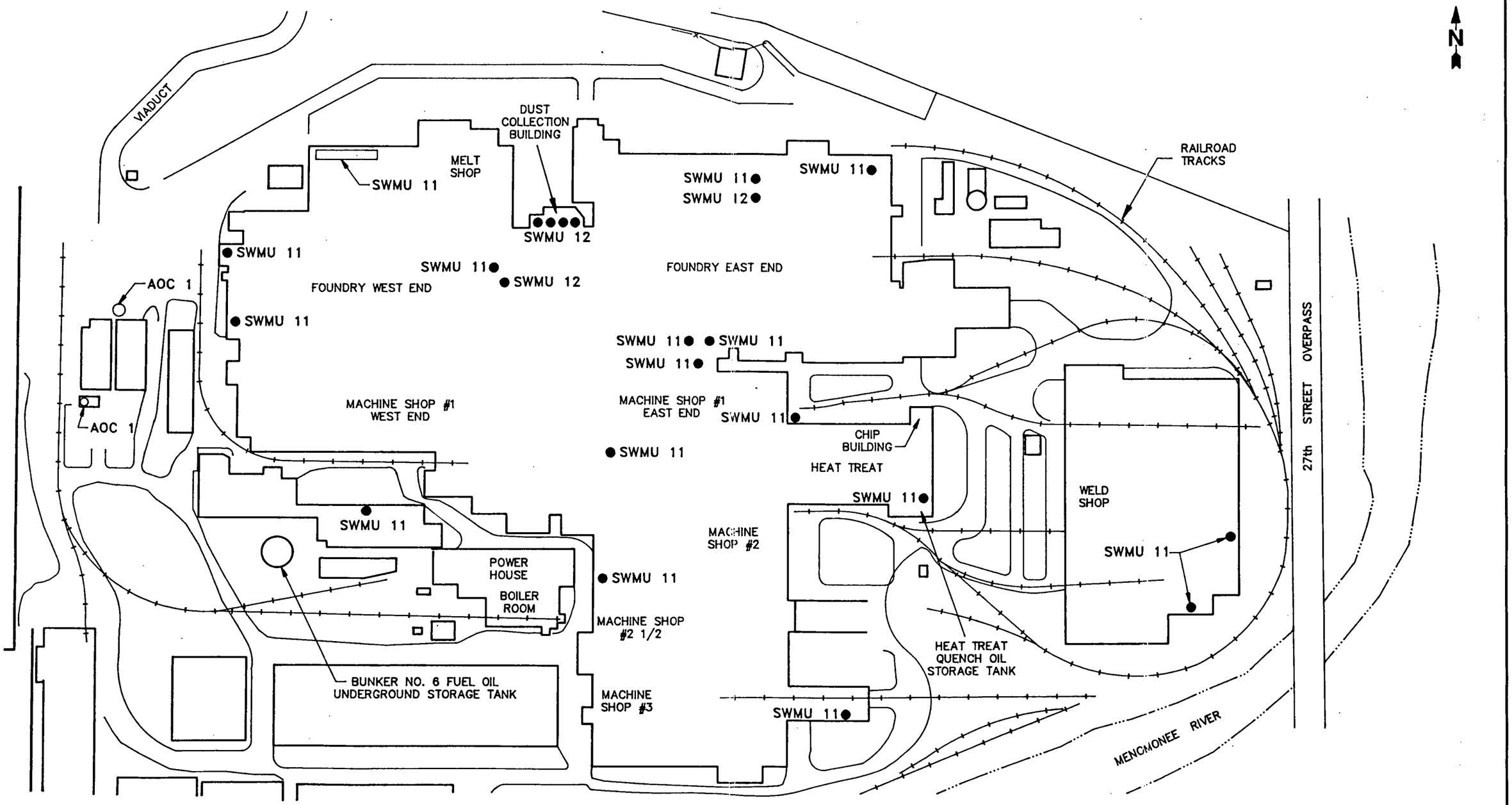
FALK-2.DWG - 11/10/92 - GFR - 009-C05087M4E



LEGEND

SWMU 11	DRY DUST COLLECTORS
SWMU 12	WET DUST COLLECTORS
AOC 1	FUEL UNDERGROUND STORAGE TANKS

NOT TO SCALE

SOURCE: MODIFIED FROM FALK SKETCH RECEIVED BY PRC ON JULY 24, 1992

FALK CORPORATION
MILWAUKEE, WISCONSIN

FIGURE 3
FACILITY LAYOUT–SWMU 11, SWMU 12, AND AOC 1

PRC ENVIRONMENTAL MANAGEMENT, INC.

FALK-3.DWG - 12/01/92 - CFR - 009-035097M4E

TABLE 2

SOLID WASTES

Waste/EPA Waste Code[a]	Source	Solid Waste Management Unit[b]
Waste enamel paint and xylene/F003	Painting operation	SWMU 1
Waste copper cyanide/P030	Heat treating operation	SWMU 1
Spent mineral spirits/D001	Cleaning and washing operation	None
Spent mineral spirits and 1,1,1-trichloroethane mixture/D001 and F001	Cleaning and washing operation	None
Used paint booth filters/NA	Painting operation	SWMU 3
Spent refractory bricks/NA	Heat treat and melt shop operations	SWMU 3
Waste lapping compound/NA	Machining operation	SWMU 1
Scrap metal chips and turnings/NA	Machining operation	SWMU 2
Scrap metal pieces/NA	Machining operation	SWMU 4
Waste soldering fluid/NA	Welding operation	SWMU 1
Waste oil/NA	Equipment oil draining operation	SWMU 1
Waste shot blast/NA	Blasting operation	SWMUs 5 and 9
Waste foundry sand and debris/NA	Foundry	SWMUs 6, 8, and 9
Waste slag and skulls/NA	Foundry	SWMU 9
Waste dry collector dust/NA	Air emission dust control systems	SWMUs 7, 9, and 11
Waste wet collector dust/NA	Air emission dust control systems	SWMUs 7, 9, and 12
Waste risers and gate cuttings/NA	Foundry	SWMUs 4 and 9

TABLE 2 (Continued)

SOLID WASTES

Waste/EPA Waste Code[a]	Source	Solid Waste Management Unit[b]
Waste foundry sand washings/NA	Laundry area	SWMUs 6 and 7
Wastewater treatment plant sludge/NA	Wastewater treatment plant	SWMU 7
Incinerator ash/NA	Former Incinerator	SWMU 10

Notes:

[a] Not applicable (NA) designates nonhazardous waste.

[b] "None" indicates that the waste stream is not managed on site.

Falk is in the process of selecting a disposal facility. At the time of the VSI, the waste copper cyanide had been stored at the OSA for less than 90 days. This waste has not been transported off site for disposal because Falk has not contracted with a disposal facility.

Spent mineral spirits (D001) and a mixture of spent mineral spirits and 1,1,1-trichloroethane (TCA) (D001 and F001) (13,970 gallons per year) in containers are generated by parts cleaning and washing. About 90 parts cleaning and washing stations are located throughout the facility and are managed by Milwaukee Solvent and Chemicals, Inc. (Milsolv). Both wastestreams are transported off site by Milsolv for recycling at their facility in Menomonee Falls, Wisconsin (Falk, 1992a).

Used paint booth filters (nonhazardous) (1,400 filters per year) are generated by the parts painting operation, disposed of in roll off containers at the Solid Waste Refuse Dumpster and Compactor (SWMU 3), and transported off site by Browning Ferris Industries (BFI) to BFI's landfill in East Troy, Wisconsin (Falk, 1992a). Spent refractory bricks (nonhazardous) (about 7 tons per year) in bulk, are generated by the replacement of refractory brick from heat treat and melt shop furnaces, disposed of in roll off containers at the Solid Waste Refuse Dumpster and Compactor (SWMU 3), and transported off site by United Commercial Transport, Inc. (UCT), Salem, Wisconsin, to Falk's Rawson Avenue Landfill in Oak Creek, Wisconsin.
Waste lapping compound (nonhazardous) (about 5 cubic yards per year) in drums is generated by gear polishing and stored at the OSA (SWMU 1). This waste has not been transported off site because Falk has not contracted with a disposal facility.

Scrap metal chips and turnings (nonhazardous) (4,616 tons per year) in bulk are generated by gear and parts cutting, grinding, and polishing. The waste is stored in the Metal Chip Storage Areas (SWMU 2) and recycled at the melt shop. These wastes are also transported off site for recycling by Miller Compressing Company to their facility in Milwaukee, Wisconsin (Falk, 1992b). Scrap metal pieces (nonhazardous) (quantity unavailable) are generated by cutting and welding parts, stored in roll off containers or bins at the Scrap Metal Storage Area (SWMU 4), and recycled on site at the melt shop. Scrap metal chips and turnings (nonhazardous) and scrap metal pieces (nonhazardous) are returned to the original metal feed stock in the melt shop and recycled and mixed with original raw materials to form molten metal used in poured steel castings. (The melt shop is not a SWMU pursuant to the Code of Federal Regulation, Chapter 40, Part 261.2(e).)

A one time generation of 55-gallons of waste soldering fluid (nonhazardous) in drums occurred from parts welding in the weld shop, and was stored at the OSA (SWMU 1), and transported off site by Dahlen Transport, Inc. for disposal at Chem-Met Services, Inc. at Wyandotte, Michigan (Falk, 1992c).

Waste oil (nonhazardous) (24,450 gallons per year), is generated by the draining of machine gear boxes, compressors, fork lifts, and other lubricating and hydraulic sources. This waste is stored in bulk and drums at the OSA (SWMU 1) before being transported off site by Benz Oil, Inc, in Milwaukee, Wisconsin; Moreco Energy, Inc., in McCook, Illinois; or Rogers Oil, Inc., in Madison, Wisconsin. Each company transports to its respective facility for off-site recycling of waste oil (Falk, 1992b).

Waste shot blast (nonhazardous) in bulk is generated from the blasting and cleaning of parts with steel shot. This waste is stored in roll off boxes at the Shot Blast Storage Areas (SWMU 5) and the Foundry Area (SWMU 9). It is then recycled on site at the Shot Blast Storage Areas (SWMU 5) by vacuuming and removing the dust and returning the shot blast to the shot blast tables, or transported off site by UCT for disposal at Falk's Rawson Avenue Landfill (Falk, 1992b).

Waste foundry sand and debris (nonhazardous) in bulk is generated by the shakeout of sand moldings surrounding poured steel castings and the cleanup of waste foundry sand and debris. This waste is stored in loose piles, concrete boxes, and roll off bins at the Foundry Sand Tailings Area (SWMU 8) and the Foundry Area (SWMU 9). Waste foundry sand and debris is recycled and washed on site at the Foundry Sand Laundry Area (SWMU 6) or transported off site by UCT to Falk's Rawson Avenue Landfill.

Waste slag and skulls (nonhazardous) in bulk is generated by molten metal from foundry furnace and transport vessels. This waste is stored in the Foundry Area (SWMU 9). Waste dry and wet collector dust (nonhazardous) is generated by baghouse, cyclone, and wet scrubber air emission control systems in the Foundry Area (SWMU 9) and the machine, melt, and weld shops. The dust is stored in the Dry Dust Collectors (Dry DC) (SWMU 11), the Wet Dust Collectors (Wet DC) (SWMU 12), and the Foundry (SWMU 9). All waste dry and wet collector dust is treated on-site at the Wastewater Treatment Plant (SWMU 7). The waste dry and wet collector dust is used to solidify and stabilize the other foundry wastes sent to the Wastewater Treatment Plant (SWMU 7).

During 1991, about 33,408 tons of waste foundry sand and debris, waste slag and skulls, and dust were transported off site for disposal by UCT to Falk's Rawson Avenue Landfill (Falk, 1992b).

Waste risers and gate cuttings (nonhazardous) (quantity unavailable) are generated by the cutting and welding of poured castings in the Foundry Area (SWMU 9). This waste is stored in the Scrap Metal Storage Area (SWMU 4), and recycled on site by Falk at the melt shop. Waste foundry sand washings (nonhazardous) (quantity unavailable), in bulk, is generated by washing waste foundry sand and debris in the Foundry Sand Laundry Area (SWMU 6). This waste is transported to the Wastewater Treatment Plant (SWMU 7) for on-site treatment.

Wastewater Treatment Plant sludge (nonhazardous) (included in the waste foundry sand quantity) is generated by the combined physical treatment, mixing, and solidification using waste dry and wet collector dust, waste foundry sand washings, and treatment chemicals (i.e. polymers and alkaline materials). The sludge is stored in a treatment tank at the Wastewater Treatment Plant (SWMU 7) and transported off site for disposal by UCT to Falk's Rawson Avenue Landfill (Falk, 1992b).

In the past, incinerator ash (nonhazardous) (about 1,000 cubic yards before 1983) was generated by the on-site incineration of paper, plastic, and debris in the Former Incinerator Area (SWMU 10). The incinerator ash was transported off site for disposal by Waste Management of Wisconsin, Inc. (WMI) of Germantown, Wisconsin, to WMI's Germantown landfill (Falk, 1992c).

2.4 HISTORY OF DOCUMENTED RELEASES

The facility has no history of documented releases to ground water, surface water, air, or on-site soils.

2.5 REGULATORY HISTORY

Falk submitted a Notification of Hazardous Waste Activity form to EPA on August 25, 1980 (Falk, 1980a). Falk listed the facility as a treatment, storage, or disposal facility handling the following EPA hazardous waste codes: D001, F003, F005, F001, and F017. Falk submitted a RCRA Part A permit application on November 17, 1980 (Falk, 1980b).

The RCRA Part A permit application listed the following process codes and capacities: container storage (S01) for 11,000 gallons for SWMU 1. The RCRA Part A permit application listed the following EPA hazardous waste codes: F001, F003, F005, F017, and D001 (Falk, 1980b). A RCRA Part A permit application revision was sent to EPA and WDNR on December 3, 1981 which changed the container storage capacity to 4,000 gallons and deleted the EPA hazardous waste codes F001, F003, F005, and F017 (Falk, 1981). On February 24, 1982, Falk sent another RCRA Part A permit application revision to WDNR changing the container storage capacity to 2,000 gallons (Falk, 1982). Falk was sent an interim status letter from WDNR approving the storage of hazardous wastes on December 9, 1982 (WDNR, 1982a).

The facility RCRA closed the Oil Storage Area (OSA) (SWMU 1) on February 10, 1988 (Falk, 1988) and closure was approved by WDNR on January 12, 1989 (WDNR, 1989). The facility currently operates as a large-quantity generator.

In the past, Falk has been out of compliance with RCRA regulations. The facility was inspected by WDNR and EPA six times between 1981 and 1989. Falk was in RCRA compliance on three separate occasions (WDNR, 1982b, and 1985a; and EPA, 1981). WDNR compliance inspections in 1984, 1986, and 1988 revealed the facility was out of compliance with regulations pertaining to recordkeeping, closure plans, training, safety, and exceeding the waste storage capacity (WDNR, 1984a, 1984b, 1986a, and 1988). All RCRA violations were resolved by the facility and acknowledged by WDNR.

The facility is required to have an operating state air permit under facility identification number 241 008 240. This permit number regulates the following emission sources: boilers; electric arc furnaces; heat treat and core ovens; sand shakeout area; shot blast areas; and solvent metal cleaning (WDNR, 1992). The facility has not violated its air permits.

The facility has a history of odor complaints from area residents. Between 1981 and 1991, six formal complaint reports from residents were written up by WDNR personnel on odor and dust problems at the facility (WDNR, 1981, 1985b, 1985c, 1986b, 1991a, and 1991b).

The facility has a wastewater treatment plant (SWMU 7) which also treats waste from the facility's private storm and industrial sewer systems. The treated wastewater from the Wastewater Treatment Plant (SWMU 7) is discharged to the Milwaukee Metropolitan District sanitary sewer

system. The facility does not have a pretreatment permit for the discharge of wastewater to the local sanitary sewer system.

The facility has a Wisconsin Pollution Discharge Elimination (WPDES) permit (Permit Number WI-0001139-3) for a storm sewer water discharge to the Menomonee River from five outfall locations.

The facility removed two USTs between 1987 and 1988, and replaced them with one double-walled steel UST. The Former Fuel USTs (AOC 1) were removed prior to EPA's promulgation of UST regulations published in the Code of Federal Regulations, Title 40, Part 280. The Former Fuel USTs (AOC 1) consisted of an 8,000-gallon tank used to store unleaded gasoline and a 12,000-gallon tank that stored leaded gasoline. The new UST has cathodic protection, release detection, and double-walled construction. No record of release from the former USTs has been documented. However, on December 29, 1986, the Former Fuel USTs (AOC 1) were checked by Midwest Petroleum Services, Inc. (MPS) to determine structural integrity. MPS found a leak in the 8,000-gallon UST containing unleaded gasoline. The leak was repaired and no other release was detected by MPS or the facility. The on-site soils surrounding the USTs were never tested by Falk for the presence of TPH or BTEX. The Former Fuel USTs (AOC 1) did not undergo WDNR-approved closure (Falk, 1992d, and 1992e; PRC, 1992).

2.6 ENVIRONMENTAL SETTING

This section describes the climate; flood plain and surface water; geology and soils; and ground water in the vicinity of the facility.

2.6.1 Climate

The climate in Milwaukee County is continental. The average daily temperature is 46.9 degrees Fahrenheit (°F). The lowest average daily temperature is 29 °F in January. The highest average daily temperature is 84.1 °F in July (USDA, 1971).

The total annual precipitation for the county is 30.07 inches. The mean annual lake evaporation for the area is about 29 inches. The 1-year, 24-hour maximum rainfall is about 2.5 inches (U.S. Department of Commerce, 1963).

Prevailing winds are northwesterly from November through March, northeasterly from April through June, and southwesterly from July through October. During the windiest months - March, April, and November - the average wind speed is 14 miles per hour. June and July are the least windy months, with an average wind speed of about 10 miles per hour (USDA, 1971).

2.6.2 Flood Plain and Surface Water

Falk is located within a 100-year flood plain (FEMA, 1985). The nearest surface water body, the Menomonee River, is adjacent to and south of the facility and is used for recreational and industrial water purposes. The Menomonee River discharges to the Milwaukee River, which flows into Lake Michigan.

Surface water drains into the Menomonee River from the north to northwest by way of Falk's five WPDES-permitted storm sewer outfalls.

2.6.3 Geology and Soils

Surface soil and subsurface soils underlying the facility consist of a Ozaukee-Morley-Mequon Association with all subsoil of silty clay loam and clay. No other data on soil types and thicknesses are available because the facility is a heavy industrialized area where native soils have been displaced.

Although facility-specific information is not available, geological bedrock units in the general vicinity of the facility are known. Bedrock occurs immediately beneath glacial deposits and clay till (and and gravel aquifer), 111 to 237 feet below ground surface (bgs). The bedrock is a Silurian-age dolomite of the Niagara, Alexandrian, and Erian Series. Only one well log within 1.0 mile of the facility contains confirming descriptions of glacial drift deposits underlain by limestone formation (Niagara Dolomite) (WGNHS, 1992). This well is not in operation and was abandoned when the city of Milwaukee converted to lake water. The Niagara Dolomite is 700 feet thick and is the most widely used source of generally good quality ground water (USGS, 1973).

Ordovician-age formations underlie the Niagara Dolomite. The uppermost formation is the Maquoketa Shale, a confining shale, up to 400 feet thick. This unit is underlain by the Sinnippee Group, consisting of Galena, Decorah, and Platteville Dolomites, with some limestone and shale. The Sinnippee Group is up to 340 feet thick. Underlying the Sinnippee Group is the

St. Peter sandstone and orthoquartzitic sandstone with minor limestone, shale, and conglomerate. This 330-foot thick formation is the most widely used unit of the sandstone aquifer (USGS, 1973). Although not in use as a source aquifer, the 140-foot thick Prairie du Chien Formation, underlying the St. Peter Formation, is commonly used in combination with the sandstone and Niagara aquifers. Five Cambrian sandstone formations do not yield much water. The sandstone formations are underlain by Precambrian-age crystalline rocks.

2.6.4 Ground Water

The sand and gravel aquifer is the uppermost aquifer, up to 237 feet bgs. The primary aquifer beneath the facility is the 700-foot thick Niagara Formation. Most wells in the Niagara aquifer produce at least 10 gallons per minute (gpm), and some high-capacity wells produce as much as 1,200 gpm. Water moves through cracks, crevices, and fractures; however, the distribution of these openings is not uniform in the Niagara aquifer, and well yields are not predictable. In most cases, recharge to the Niagara aquifer is local, and paths of movement are short. Ground water flows from west to east. Because much of the overburden is clay till, many parts of the Niagara aquifer are under artesian pressure. The potentiometric surface ranges from the top of the aquifer up to or above the land surface (USGS, 1973). Well logs from the area show an average static water level of about 72 feet bgs, which is about 20 feet above the top of the limestone (Niagara Dolomite) formation (WGNHS, 1992).

2.7 RECEPTORS

The facility occupies about 51 acres in a mixed-use area in Milwaukee, Wisconsin. Milwaukee has a population of about 628,000 (Rand McNally Corporation, 1992).

The facility is bordered on the north by West Canal Street and Interstate Highway 94; on the west by a vacant lot; on the south by the Menomonee River; and on the east by the Soo Line Railroad Depot, Thiele Tanning Company (tannery), and A.L. Gebhardt Tanning Company (tannery).

The nearest school, St. Rose School, is about 0.4 mile north of the facility. The facility has a barbed wire fence surrounding the property and 24-hour security guards. The nearest residence is about 0.2 mile north of the facility.

The nearest surface water body, the Menomonee River, is immediately adjacent to the facility on the south and east and is used for recreational and industrial water purposes. Other surface water bodies in the area include the Milwaukee River which is about 2.1 miles east and Lake Michigan which is about 2.5 miles east.

No ground-water drinking wells are within 2.5 miles of the facility. Drinking water is supplied by the city of Milwaukee from Lake Michigan (City of Milwaukee, 1992). Sensitive environments are not located on site. The nearest wetland is 1.7 miles northwest of the facility (WWI, 1982a and 1982b).

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the 12 SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and PRC's observations. Figures 2 and 3 show the SWMU locations.

SWMU 1	**Oil Storage Area**
Unit Description:	The unit is outdoors and is about 6 inches below ground surface. The unit measures about 30 by 30 feet. This unit is a pole-shed type structure and consists of an epoxy-sealed concrete floor with metal walls on three sides and a metal roof.
Date of Startup:	The unit began operation in about 1980.
Date of Closure:	The unit underwent RCRA closure in 1988, which was approved by WDNR in 1989.
Wastes Managed:	The unit manages waste enamel paint (F003); waste copper cyanide (P030); spent mineral spirits and 1,1,1-TCA mixture (D001 and F001); waste lapping compound (nonhazardous); waste soldering fluid (nonhazardous); and waste oil (nonhazardous). All wastes are managed in drums or in portable tanks (waste oil).
Release Controls:	The unit has an epoxy-sealed, sunken concrete floor and a concrete berm surrounding it. A metal roof and walls on three sides enclose the unit. No air emission controls exist for the unit. A floor drain leads to a sealed secondary spill containment sump. A secondary containment berm surrounds the entire facility.
History of Documented Releases:	No releases from the unit have been documented.

Observations:	During the VSI, the unit contained about 30 drums of waste lapping compound; numerous 1- and 5-gallon cans of waste enamel paint with xylene; two drums of waste soldering fluid; one 1-gallon can of waste copper cyanide used in heat treating; and numerous drums and small, portable tanks of waste oil (see Photograph No. 1).
SWMU 2	**Metal Chip Storage Area**
Unit Description:	The units are both indoors and outdoors, depending on the unit's location at the facility. All units are aboveground and consist of 20- to 40-cubic-yard metal roll off containers. The units are on either an asphalt or concrete pad. No floor drains are present near these units.
Date of Startup:	The units began operation in about 1970.
Date of Closure:	The units are active.
Wastes Managed:	The units manage scrap metal chips and turnings.
Release Controls:	The units only release controls is either an asphalt or concrete pad and a secondary containment berm that surrounds the entire facility.
History of Documented Release:	No releases from these units have been documented.
Observations:	During the VSI, the units contained scrap metal chips and turnings (nonhazardous) in 20- to 40-cubic-yard metal roll off containers. PRC observed no cracks or stains in the asphalt or concrete pads and no evidence of release (see Photograph No. 2).

SWMU 3	**Solid Waste Refuse Dumpster and Compactor**
Unit Description:	The units are aboveground and outdoors, and consist of 20- to 40-cubic-yard metal roll off containers. The units are on either an asphalt or concrete pad. The units are located about 150 feet west of the facility's power house (see Figure 2). No floor drains are present near these units.
Date of Startup:	The units began operation in about 1970 (estimate).
Date of Closure:	The units are active.
Wastes Managed:	The units manage used paint booth filters (nonhazardous) and spent refractory bricks (nonhazardous).
Release Controls:	Release controls include either an asphalt or concrete pad and a secondary containment berm that surrounds the entire facility.
History of Documented Release:	No releases from these units have been documented.
Observations:	During the VSI, the units contained paper, and general refuse in a metal roll off container. PRC noted no evidence of release.
SWMU 4	**Scrap Metal Storage Areas**
Unit Description:	Both units are aboveground and indoors. The units are located in the Foundry Area (SWMU 9) and the melt and weld shops. The units measure about 10 by 20 feet to about 60 by 60 feet in metal roll off containers or storage boxes. The units are situated on top of concrete pads. No floor drains are present near the units.
Date of Startup:	The units began operation in about 1970 (estimate).
Date of Closure:	The units are active.

Wastes Managed:	The units manage scrap metal pieces (nonhazardous) and waste risers and gate cuttings (nonhazardous).
Release Controls:	Release controls include a concrete floor and a secondary containment berm that surrounds the entire facility.
History of Documented Release:	No releases from these units have been documented.
Observations:	During the VSI, the units contained scrap steel metal in various sizes and shapes. No floor drains were visible. PRC noted no evidence of release (see Photographs No. 4 and 16).
SWMU 5	**Shot Blast Storage Area**
Unit Description:	The two units are aboveground and indoors. The units measure about 4 by 6 feet and consist of metal bins above an epoxy-sealed concrete floor. No floor drains are located near these units.
Date of Startup:	The units began operation in about 1940 (estimate).
Date of Closure:	Both units are active.
Wastes Managed:	Both units manage waste shot blast (nonhazardous).
Release Controls:	Release controls include an epoxy-sealed concrete floor below the units and a secondary containment berm that surrounds the entire facility.
History of Documented Release:	No releases from this unit have been documented.
Observations:	During the VSI, PRC noted that the units contained waste shot blast spilled on the floor. Cracks are present in the concrete floor;

however, there are no stains in the concrete (see Photographs No. 6 and 15).

SWMU 6	**Foundry Sand Laundry Area**
Unit Description:	The unit is aboveground and indoors. The unit measures about 100 by 100 feet and consists of metal washing equipment. The unit is used to leach waste foundry sand and debris from the Foundry Area (SWMU 9). The washed foundry sand is recycled using water to wash the waste foundry sand and debris and then the foundry sand washings are transported to the Wastewater Treatment Plant (SWMU 7) by the facility.
Date of Startup:	The unit began operation in about 1970.
Date of Closure:	The unit is active.
Wastes Managed:	The unit manages waste foundry sand and debris (nonhazardous).
Release Controls:	Release controls include a concrete floor below the unit and a secondary containment berm that surrounds the entire facility.
History of Documented Release:	No releases from the unit have been documented.
Observations:	During the VSI, the unit was not in operation due to the facility's annual 2-week shutdown. PRC noted no evidence of release. No photograph was taken of this SWMU because it is located on the second floor of the Foundry Area (SWMU 9) and there was insufficient lighting to take a picture.
SWMU 7	**Wastewater Treatment Plant**
Unit Description:	The Wastewater Treatment Plant is aboveground and outside. The unit consists of concrete pads and three aboveground concrete tanks

	and is about 80 by 70 feet. Capacities of each aboveground tank are unknown. The unit is used to physically treat and stabilize waste foundry sand washings transported from the Foundry Sand Laundry Area (SWMU 6), waste dry collector dust, and waste wet collector dust using alkalis and polymers. Waste dry and wet collector dust is used to stabilize and solidify all waste foundry sand washings.
Date of Startup:	The unit began operation in about 1970 (estimate).
Date of Closure:	The unit is active.
Wastes Managed:	The unit manages and treats waste foundry sand washings (nonhazardous), waste dry collector dust (nonhazardous), and waste wet collector dust. The stabilization process generates a wastewater treatment plant sludge (nonhazardous) that is stored in one of the aboveground, concrete tanks at this SWMU.
Release Controls:	Release controls include concrete pads below the unit and a secondary containment berm that surrounds the entire facility.
History of Documented Release:	No past releases from the unit have been documented.
Observations:	During the VSI, the unit contained wastewater treatment plant sludge. PRC observed no visible cracks in the wastewater treatment tanks and noted no evidence of release (see Photographs No. 7 and 9).
SWMU 8	**Foundry Sand Tailings Area**
Unit Description:	The unit is aboveground and outside, and consists of waste foundry sand that has fallen off the conveyor system that transports waste foundry sand to the Foundry Sand Laundry Area (SWMU 6). The waste foundry sand is stored in an uncontained waste pile, which is

about 2 by 15 feet. Waste foundry sand from this area is also stored in open-top metal bins about 20 feet east of the waste pile.

Date of Startup: The unit began operation in about 1970 (estimate).

Date of Closure: The unit is active.

Wastes Managed: The unit manages waste foundry sand (nonhazardous).

Release Controls: Release controls include an asphalt pad below the unit and a secondary containment berm that surrounds the entire facility.

History of Documented Release: No past releases from the unit have been documented.

Observations: During the VSI, the unit contained waste foundry sand and debris stored in an uncontained waste pile below the conveyor system and stored in open-top metal bins. The waste foundry sand and debris was tracked across an adjacent asphalt roadway and onto a gravel lot area. PRC noted that the size of the waste foundry sand and debris pile was about 20 by 20 feet by 3 feet (see Photographs No. 8 and 9).

SWMU 9 **Foundry Area**

Unit Description: The Foundry Area is both aboveground and belowground, and indoors. The belowground portion consists of pits used for the pouring and cooling of molten scrap and new steel into preformed sand castings. The pits are about 10 feet below ground. The overall size of this unit is 350 by 950 feet and consists of a metal roof, metal and concrete walls, and concrete floors.

Date of Startup: The unit began operation in about 1892.

Date of Closure: The unit is active.

Wastes Managed:	The unit manages waste shot blast (nonhazardous); waste foundry sand and debris (nonhazardous); waste slag and skulls (nonhazardous); waste dry and wet collector dust (nonhazardous); and waste risers and gate cuttings (nonhazardous).
Release Controls:	Release controls include dry and wet dust collectors, concrete floors, and a secondary containment berm that surrounds the entire facility.
History of Documented Release:	No releases from the unit have been documented.
Observations:	During the VSI, the unit contained scrap metal pieces, uncovered waste foundry sand and debris piles, waste slag and skulls, and waste scrap metal. PRC noted that there were visible cracks and pitted areas in the concrete floor throughout the Foundry Area. Poured steel castings were cooling in the pouring pits. Waste foundry sand and resulting dust was present throughout this SWMU (see Photographs No. 10 through 14). The foundry was not in operation during the VSI because the facility was on its annual 2-week shutdown.
SWMU 10	**Former Incinerator Area**
Unit Description:	The Former Incinerator Area was aboveground and outside. The unit was about 6 by 20 feet (estimate) and was made of steel, concrete, and possibly bricks. The unit incinerated nonhazardous paper, wood, and general facility refuse.
Date of Startup:	The unit began operation in about 1961.
Date of Closure:	The unit ceased operation in 1985.
Wastes Managed:	The unit managed incinerator ash (nonhazardous).

Release Controls:	Release controls for the unit are unknown.
History of Documented Release:	No releases from the unit have been documented.
Observations:	During the VSI, PRC observed that the unit has been removed. PRC noted no evidence of release. No photograph was taken of this unit.
SWMU 11	**Dry Dust Collectors**
Unit Description:	The units are indoors and aboveground. The units are located in the Foundry Area (SWMU 9) and the machine, melt and weld shops. The units measure 4 by 8 feet to 15 by 60 feet. The units are made up of two types of air collection systems: baghouse and cyclone dust collection systems.
Date of Startup:	The units began operation in about 1960 (estimate).
Date of Closure:	The units are active.
Wastes Managed:	The units manage waste dry collector dust (nonhazardous).
Release Controls:	Release controls include an asphalt or concrete pad below the unit, closed-top metal bins used to collect the dust, and a secondary containment berm that surrounds the entire facility.
History of Documented Release:	No releases from these units have been documented.
Observations:	During the VSI, the units contained dry collector dust in closed-top bins. Visible cracks in the concrete were noticed; however, PRC noted no evidence of release (see Photograph No. 18).

SWMU 12	**Wet Dust Collectors**
Unit Description:	The units are indoors and aboveground. The units are located in the Foundry Area (SWMU 9) and the melt shop, and measure about 10 by 30 feet to 30 by 50 feet. The units consist of metal and concrete and have a concrete floor below them. No visible floor drains are near the units. Waste wet collector dust is from the wet scrubber air emissions control system and is stored in closed-top metal containers.
Date of Startup:	The units began operation in about 1960.
Date of Closure:	The units are active.
Wastes Managed:	The units manage waste wet collector dust (nonhazardous).
Release Controls:	Release controls include a concrete floor, closed-top metal containers, and a secondary containment berm that surrounds the entire facility.
History of Documented Release:	No releases from these units have been documented.
Observations:	During the VSI, the units were not in operation because of the facility's annual 2-week shutdown. PRC noted no evidence of release (see Photograph No. 14).

4.0 AREAS OF CONCERN

PRC identified one AOC during the PA/VSI. This AOC is discussed below; its location is shown in Figure 3.

AOC 1 Former Fuel USTs

The facility formerly had two fuel underground storage tanks (UST), an 8,000-gallon tank for unleaded gasoline, and a 12,000-gallon tank for leaded gasoline (Former Fuel USTs) (AOC 1). On December 29, 1986, the Former Fuel USTs (AOC 1) were checked by Midwest Petroleum Service, Inc. (MPS) to determine their structural integrity. MPS found a leak in the 8,000-gallon UST containing unleaded gasoline. The leak was found to be located in the piping system. MPS repaired the leak(s) and no further indication of leakage was found.

On August 17, 1987, the 12,000-gallon UST was removed from the Falk facility. On January 15, 1988, the 8,000-gallon UST was removed from the facility. These Former Fuel USTs (AOC 1) were replaced with one new UST, which is used for the storage of unleaded gasoline. In the process of removing the former USTs, Falk did not collect soil samples to confirm or deny the presence of TPH or BTEX in the surrounding excavated soil. Ground water monitoring wells were not installed to monitor for the potential of ground water contamination from TPHs. Falk removed the former USTs prior to EPA's promulgation of the UST regulations, which are published under the Code of Federal Regulations, Chapter 40, Part 280. The Former Fuel USTs were not approved for closure by EPA or WDNR. TPH or BTEX contamination of on-site soil has not been determined (Falk, 1992d; PRC, 1992).

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified 12 SWMUs and 1 AOC at the Falk facility. Background information on the facility's location; operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. AOCs are discussed in Section 4.0. Following are PRC's conclusions and recommendations for each SWMU and AOC. Table 3, at the end of this section, summarizes the SWMUs and AOC at the facility and the recommended further actions.

SWMU 1 **Oil Storage Area**

Conclusions: The Oil Storage Area is used for the less than 90-day storage of hazardous and solid wastes. The unit has a low potential for release to ground water, surface water, air, and on-site soils because the unit has an epoxy-sealed, sunken concrete floor and has a secondary containment berm surrounding the entire facility.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 2 **Metal Chip Storage Area**

Conclusions: The Metal Chip Storage Area is used to store scrap metal chips and turnings from machining operations. The unit has a low potential for release to ground water, surface water, air, and on-site soils because the scrap metal chips and turnings are stored in metal roll off containers; the units have an asphalt or concrete pad and are indoors or outdoors and covered; and a secondary containment berm surrounds the entire facility.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 3 **Solid Waste Refuse Dumpster and Compactor**

Conclusions: The Solid Waste Refuse Dumpster and Compactor is used for the disposal of nonhazardous spent refractory bricks and used paint booth filters. The unit has a low potential for release to ground water, surface water, air, and on-site soils because the nonhazardous waste is stored in closed-top metal roll off containers; the units have an asphalt or concrete pad; and a secondary containment berm surrounds the entire facility.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 4 **Scrap Metal Storage Area**

Conclusions: The Scrap Metal Storage Area is used to store nonhazardous scrap metal pieces and waste risers and gate cuttings before on-site recycling in the melt shop. The two units have a low potential for release to ground water, surface water, air, and on-site soils because the units are indoors; and have concrete pads below the units; furthermore, a secondary containment berm surrounds the entire facility.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 5 **Shot Blast Storage Area**

Conclusions: The Shot Blast Storage Area is used to store nonhazardous waste shot blast. The units have a low potential for release to ground water, surface water, air, and on-site soils because the units are indoors, have an epoxy-sealed concrete floor, waste is stored in metal bins, and a secondary containment berm surrounds the entire facility.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 6 **Foundry Sand Laundry Area**

Conclusions: The Foundry Sand Laundry Area is used to wash waste foundry sand, which is then recycled by the facility. The unit has a low potential for release to ground water, surface water, air, and on-site soils because the

unit is indoors, has a concrete floor below it, and a secondary containment berm surrounds the entire facility.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 7 **Wastewater Treatment Plant**

Conclusions: The Wastewater Treatment Plant is used to treat and stabilize various nonhazardous wastes. The unit has a low potential for release to ground water, surface water, air, and on-site soils because the unit has concrete pads below it, and a secondary containment berm surrounds the entire facility.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 8 **Foundry Sand Tailings Area**

Conclusions: The Foundry Sand Tailings Area is aboveground and outside. The unit has a moderate potential for release to surface water, ground water, air, and on-site soils because release controls are inadequate and cannot prevent further on-site and off-site migration of waste foundry sand and debris.

Recommendations: PRC recommends that the facility prevent the future release of waste foundry sand by constructing a containment structure to hold the waste foundry sand, and covering the waste foundry sand to prevent an air release.

SWMU 9 **Foundry Area**

Conclusions: The Foundry Area has waste foundry sand and debris piles stored throughout the unit. The unit has a moderate potential for release to surface water, ground water, air, and on-site soils because (1) waste foundry sand can be discharged or tracked outside to the environment, and (2) there are numerous cracks and pitted areas in the concrete floor.

Recommendations: PRC recommends that the facility take corrective action to prevent future release of waste foundry sand to the environment. This may include sealing all cracks and pitted areas in the concrete floor, additional air emission control and dust suppression systems, and containing waste foundry sand and debris piles with barriers.

SWMU 10 **Former Incinerator Area**

Conclusions: The Former Incinerator Area was used to incinerate nonhazardous paper, wood, and general facility refuse. The unit has an unknown potential of release to ground water, surface water, air, and on-site soils because the unit was removed in 1985 and no EPA or WDNR documentation exists on the condition of the unit prior to removal.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 11 **Dry Dust Collectors**

Conclusions: The Dry Dust Collectors are used to collect dry dust from the Foundry Area (SWMU 9), and the weld, machine, and melt shop area operations. The units have a low potential for release to ground water, surface water, air, and on-site soils because the units have a concrete pad below the units, the dust is contained in closed-top bins, most of the units are indoors, and there were no visible signs of release to the environment.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 12 **Wet Dust Collectors**

Conclusions: The Wet Dust Collectors are used to remove and collect airborne dust from the melt shop and Foundry Area (SWMU 9). The units have a low potential for release to ground water, surface water, air, and on-site soils because the units have a concrete pad or floor below them, the dust from the wet scrubbers is contained, and the units are indoors.

Recommendations: PRC recommends no further action for this SWMU.

AOC 1 **Former Fuel USTs**

Conclusions: The facility formerly had an 8,000-gallon UST for unleaded gasoline and a 12,000-gallon UST for leaded gasoline (Former Fuel USTs). On December 29, 1986, Falk's subcontractor, MPS, detected a leak in the 8,000-gallon UST. The leak was found to be located on the top of the tank, or in the piping system. MPS repaired the leak(s) and no further indication of leakage was found. However, the soils surrounding these USTs were not sampled or analyzed to verify or deny the potential contamination TPH or BTEX. In 1987, the 12,000-gallon UST was removed by the facility. In 1988, the 8,000-gallon UST was removed. The Former Fuel USTs were replaced with a double-steel walled UST with cathodic protection and release detection for unleaded gasoline.

Since a leak occurred in the piping system of the 8,000-gallon UST, the possibility exists that a release to on-site soils has occurred. The potential for release to ground water is moderate because there exists the possiblity that TPH and BTEX contamination has occurred in the uppermost aquifer unit, which is the sand and gravel aquifer. Falk has not analyzed adjacent soils or ground water for TPH and BTEX contamination.

The potential for release to surface water and air is low because the leak from the 8,000-gallon UST occurred below ground surface.

Recommendations: PRC recommends that Falk sample the surrounding on-site soils where the Former Fuel USTs were located. Each sample should be analyzed for TPH and BTEX.

TABLE 3

SWMU AND AOC SUMMARY

SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
1. Oil Storage Area	1980 to present	None	No further action required at this time
2. Metal Chip Storage Area	About 1970 to present	None	No further action required at this time
3. Solid Waste Refuse Dumpster and Compactor	About 1970 to present	None	No further action required at this time
4. Scrap Metal Storage Area	About 1970 to present	None	No further action required at this time
5. Shot Blast Storage Area	About 1940 to present	None	No further action required at this time
6. Foundry Sand Laundry Area	About 1970 to present	None	No further action required at this time
7. Wastewater Treatment Plant	About 1970 to present	None	No further action required at this time
8. Foundry Sand Tailings Area	About 1970 to present	None	Construct a containment structure to prevent future release of foundry sand and cover the waste foundry sand to prevent an air release

TABLE 3 (Continued)

SWMU AND AOC SUMMARY

SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
9. Foundry Area	1892 to present	None	Seal all cracks and pitted areas in the concrete floor, add additional air emission control, dust suppression systems, and contain the waste foundry sand and debris piles with barriers
10. Former Incinerator Area	1961 to 1985	None	No further action required at this time
11. Dry Dust Collectors	About 1960 to present	None	No further action required at this time
12. Wet Dust Collectors	About 1960 to present	None	No further action required at this time

AOC	Dates of Operation	Evidence of Release	Recommended Further Action
1. Former Fuel USTs	About 1960 to 1988	The facility documented the release of unleaded gasoline from a UST and on-site soils were not sampled or analyzed for TPH and BTEX	Collect soil samples around the location of the Former Fuel USTs to determine extent of TPH and BTEX contamination

REFERENCES

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Falk, 1981. Revised RCRA Part A Permit Application, December 3.

Falk, 1982. Revised RCRA Part A Permit Application, February 24.

Falk, 1988. Letter from Kenneth G. Fries to Patrick Brady, Wisconsin Department of Natural Resources (WDNR), February 10.

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Falk, 1992c. Letter from Kenneth G. Fries to Kurt Whitman, PRC, September 25.

Falk, 1992d. Letter from Kenneth G. Fries to Kurt Whitman, PRC, October 15.

Falk, 1992e. Letter from Kenneth G. Fries to Kurt Whitman, PRC, November 19.

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U.S. Environmental Protection Agency (EPA), 1981. Memorandum from Arnold E. Leder to Robert Krill, WDNR, October 15.

U.S. Geological Survey (USGS), 1971. Milwaukee Quadrangle, Wisconsin - Milwaukee County.

USGS, 1973. Water Resources of Wisconsin - Lake Michigan Basin, Hydrologic Investigations, Atlas HA-432.

Wisconsin Department of Natural Resources (WDNR), 1981. Complaint/Inquiry Report Form, July 16.

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WDNR, 1984b. Letter from Ken Hein to James Bauerschmidt, Falk, April 30.

WDNR, 1985a. Letter from Elizabeth Duchelle to Kenneth G. Fries, Falk, September 25.

WDNR, 1985b. Entity Contact Report Form, June 4.

WDNR, 1985c. Complaint/Inquiry Report Form, June 27.

WDNR, 1986a. Hazardous Waste Compliance Monitoring and Enforcement Summary for Falk, August 7.

WDNR, 1986b. Complaint/Inquiry Report Form, April 1.

WDNR, 1988. Letter from Richard Brown to Don Paulus, Falk, January 4.

WDNR, 1989. Letter from Franklin C. Schultz to Don Paulus, Falk, January 12.

WDNR, 1991a. Complaint/Inquiry Report Form, May 21.

WDNR, 1991b. Complaint/Inquiry Report Form, May 22.

WDNR, 1992. Air Compliance Inspection Report for Falk Corporation, Plant 1, April 29.

Wisconsin Geological and Natural History Survey (WGNHS), 1992. Geological and Water Well Logs for Township 7 North, Range 21 East, Sections 25, 30, and 35, open file, reviewed May 27.

Wisconsin Wetlands Inventory (WWI), 1982a. National Wetlands Inventory Map, Township 7, Range 21 East, Milwaukee County, Wisconsin, January.

Wisconsin Wetlands Inventory (WWI), 1982b. National Wetlands Inventory Map, Township 7 North, Range 22 East, Milwaukee County, Wisconsin, January.

ATTACHMENT A

EPA PRELIMINARY ASSESSMENT FORM 2070-12

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WI	WID 006 097 083

II. SITE NAME AND LOCATION

01 SITE NAME *(Legal, common, or descriptive name of site)*	02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER				
Falk Corporation	3001 West Canal Street				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Milwaukee	WI	53201	Milwaukee	07	05
09 COORDINATES: LATITUDE	**LONGITUDE**				
43°01'46"N	87°57'04"W				

10 DIRECTIONS TO SITE *(Starting from nearest public road)*

Take Interstate Hwy. 94 (east or west) to North 27th St. Proceed north on 27th St. to Michigan Ave. Turn right (east) on Michigan Ave. to 25th St. Turn right (south) on 25th St. until you reach Canal St. Turn left and then immediately right to Falk.

III. RESPONSIBLE PARTIES

01 OWNER *(if known)*	02 STREET *(Business, mailing residential)*		
Sundstrand Corporation	P.O. Box 5247		
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**
Rockford	IL	61125-0247	(800) 638-6116
07 OPERATOR *(If known and different from owner)*	**08 STREET** *(Business, mailing, residential)*		
Same			
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**

13 TYPE OF OWNERSHIP *(Check one)*

☒ A. PRIVATE ☐ B. FEDERAL: _____ *(Agency Name)* ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER _____ *(Specify)* ☐ G. UNKNOWN

14. OWNER/OPERATOR NOTIFICATION ON FILE *(Check all that apply)*

☒ A. RCRA 3010 DATE RECEIVED: 08 /20 /80 (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE *(CERCLA 103 c)* DATE RECEIVED: / / (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION BY *(Check all that apply)*

☐ A. EPA ☒ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR

☒ YES DATE 07/24/92 ☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ *(Specify)*

☐ NO

CONTRACTOR NAME(S): PRC Environmental Management, Inc. (PRC)

02 SITE STATUS *(Check one)*

☒ A. ACTIVE ☐ B. INACTIVE ☐ C.UNKNOWN

03 YEARS OF OPERATION

1982 (BEGINNING YEAR) Present (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Waste enamel, paint and xylene (F003); used paint booth filters (nonhazardous); waste copper cyanide(P030); spent refractory bricks (nonhazardous); spent mineral spirits (D001); spent mineral spirits and 1,1,1-trichloroethane (D001 and F001); waste lapping compound (nonhazardous); scrap metal chips and turnings (nonhazardous); waste soldering fluid (nonhazardous); waste oil (nonhazardous); waste foundry sand, sweepings, debris, slag, skulls, risers, and gate cuttings (nonhazardous); waste dry and wet collector dust (nonhazardous); waste foundry sand washings (nonhazardous); wastewater treatment sludge (nonhazardous); and incinerator ash (nonhazardous).

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Overall potential for release to environmental media is moderate. The greatest hazard to the environment is off-site dust contamination from various foundry wastes. Airborne dust can be carried to residential population areas, which are located within 0.5 mile of the facility. Between 1987 and 1988, two Underground Storage Tanks (USTs) were removed by the facility. No laboratory testing was done on the on-site soils next to the USTs to confirm or deny the presence of total petroleum hydrocarbons or benzene, toulene, ethylbenzene, or xylene, although a piping system associated with one of the tanks is known to have leaked.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION *(Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents.)*

☐ A. HIGH *(Inspection required promptly)* ☒ B. MEDIUM *(Inspection required)* ☐ C. LOW *(Inspect on time-available basis)* ☐ D. NONE *(No further action needed; complete current disposition form)*

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF *(Agency/Organization)*			03 TELEPHONE NUMBER
Kevin Pierard	U.S. EPA			(312) 886-4448
04 PERSON RESPONSIBLE FOR ASSESSMENT	**05 AGENCY**	**06 ORGANIZATION**	**07 TELEPHONE NUMBER**	**08 DATE**
Kurt E. Whitman		PRC	(414) 821-5894	12 / 22 / 92 (MONTH DAY YEAR)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WI	WID 006 097 083

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ■ A. SOLID
- □ B. POWDER, FINES
- ■ C. SLUDGE
- □ D. OTHER _____ *(Specify)*
- □ E. SLURRY
- ■ F. LIQUID
- □ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TON None

CUBIC YARDS None

NO. OF DRUMS About 20

03 WASTE CHARACTERISTICS *(Check all that apply)*

- ■ A. TOXIC
- □ B. CORROSIVE
- □ C. RADIOACTIVE
- □ D. PERSISTENT
- □ E. SOLUBLE
- □ F. INFECTIOUS
- □ G. INFLAMMABLE
- ■ H. IGNITABLE
- □ I. HIGHLY VOLATILE
- □ J. EXPLOSIVE
- □ K. REACTIVE
- □ L. INCOMPATIBLE
- □ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	1,100	Gallons	
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS	10	Pounds	
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	waste enamel paint and xylene	1330-20-7	Storage	Unknown	-
IOC	waste copper cyanide	544-92-3	Storage	Unknown	-
SOL	spent mineral spirits	8030-30-6	Storage	Unknown	-
SOL	1,1,1-trichloroethane	71-55-6	Storage	Unknown	-

V. FEEDSTOCKS *(See Appendix for CAS Numbers)*

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION *(Cite specific references; e.g., state files, sample analysis, reports)*

Falk Corporation, 1992. Hazardous Waste Identification and Certification Report, February 25.
Wisconsin Department of Natural Resources, Hazardous Waste Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE: WI	02 SITE NUMBER: WID 006 097 083

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ■ A. GROUNDWATER CONTAMINATION — 02 □ OBSERVED (DATE: ____) — ■ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION

Two underground storage tanks containing unleaded gasoline and diesel fuel were removed in 1986, however, the on-site groundwater was not tested for total petroleum hydrocarbons. In addition, the piping from an 8,000-gallon unleaded gasoline underground storage tank leaked.

01 □ B. SURFACE WATER CONTAMINATION — 02 □ OBSERVED (DATE: ____) — □ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None

01 □ C. CONTAMINATION OF AIR — 02 □ OBSERVED (DATE: ____) — □ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None

01 □ D. FIRE/EXPLOSIVE CONDITIONS — 02 □ OBSERVED (DATE: ____) — □ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None

01 □ E. DIRECT CONTACT — 02 □ OBSERVED (DATE: ____) — □ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None

01 ■ F. CONTAMINATION OF SOIL — 02 □ OBSERVED (DATE: ____) — ■ POTENTIAL — □ ALLEGED
03 AREA POTENTIALLY AFFECTED: 1 to 5 (Acres) — 04 NARRATIVE DESCRIPTION

Two underground storage tanks containing unleaded gasoline and diesel fuel were removed in 1986, however, the on-site soil was not tested for total petroleum hydrocarbons. In addition, an 8,000-gallon unleaded gasoline underground storage tank leaked.

01 □ G. DRINKING WATER CONTAMINATION — 02 □ OBSERVED (DATE: ____) — □ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None

01 □ H. WORKER EXPOSURE/INJURY — 02 □ OBSERVED (DATE: ____) — □ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None

01 □ I. POPULATION EXPOSURE/INJURY — 02 □ OBSERVED (DATE: ____) — □ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WI	WID 006 097 083

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None

01 ☐ K. DAMAGE TO FAUNA 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None

01 ☐ L. CONTAMINATION OF FOOD CHAIN 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES 02 ☐ OBSERVED (DATE:_____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown 04 NARRATIVE DESCRIPTION

Dust from waste foundry sand and debris can become airborne, where it will be carried off-site to residential areas and adjacent manufacturing operation facilities.

01 ☐ N. DAMAGE TO OFF-SITE PROPERTY 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None

01 ☐ O. CONTAMINATION OF SEWERS, DRAINS, WWTPS 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: Unknown

IV. COMMENTS

V. SOURCES OF INFORMATION ***(Cite specific references; e.g., state files, sample analysis, reports)***

Wisconsin Department of Natural Resources File Review.

ATTACHMENT B

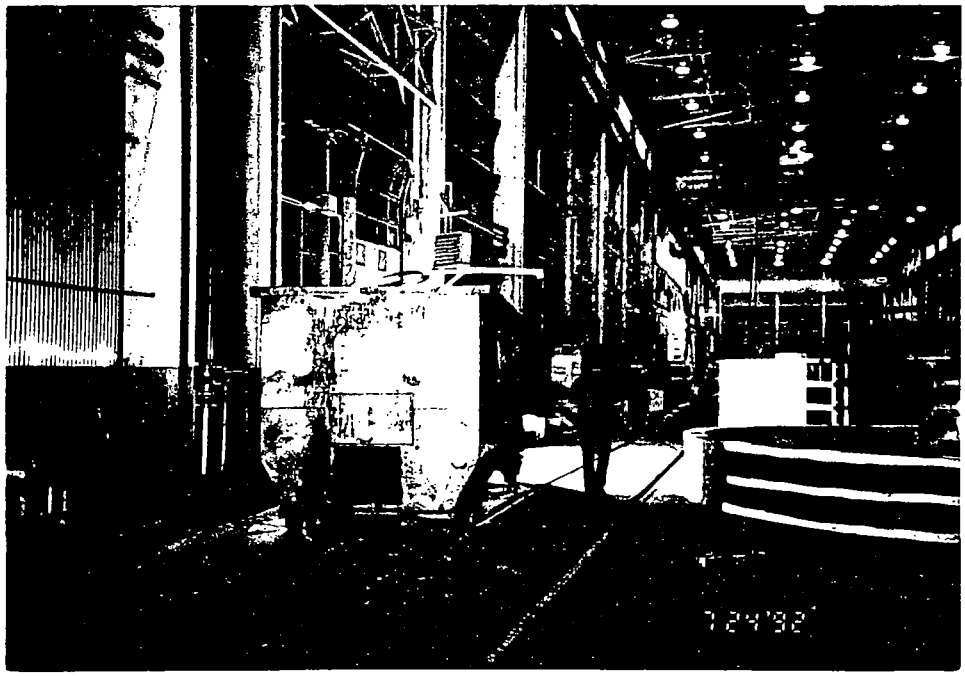
VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

VISUAL SITE INSPECTION SUMMARY

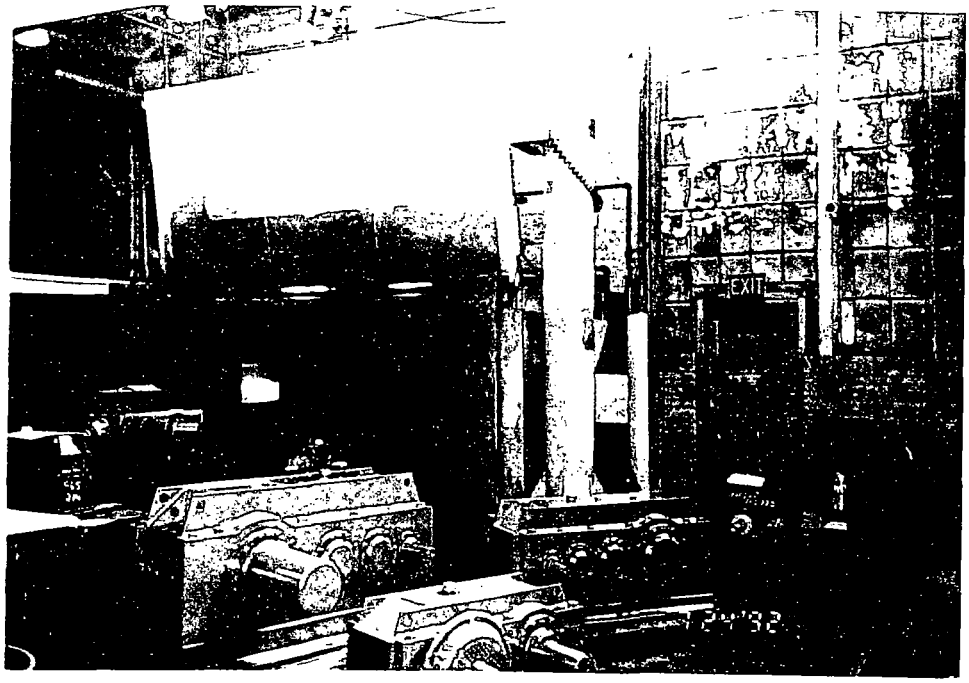
Falk Corporation
3001 West Canal Street
Milwaukee, WI 53201
WID 006 097 083

Date:	July 24, 1992
Primary Facility Representative:	Donald Paulus, Environmental Engineer
Representative Telephone No.:	(414) 937-4371
Additional Facility Representatives:	Kenneth Fries, Environmental Engineer
Inspection Team:	Kurt Whitman, PRC Environmental Management, Inc. (PRC) Trent Schade, PRC
Photographer:	Kurt Whitman, PRC
Weather Conditions:	Calm, sunny, temperature about 75 °F
Summary of Activities:	The visual site inspection (VSI) began at 8:30 a.m. with an introductory meeting. The inspection team explained the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the facility's past and current operations, solid wastes generated, and release history. Facility representatives provided the inspection team with copies of requested documents. The VSI tour began at 9:30 a.m. Falk representatives stated that the facility was in the middle of an annual 2-week plant shutdown. PRC began its inspection at the Oil Storage Area (OSA) (SWMU 1). PRC visited the Metal Chip Storage Area (SWMU 2); the Former Incinerator Area (SWMU 10); the machine shops; the facility's boiler room and power house areas; the heat treat shop areas; paint booth operations; the paint storage area; weld shop building; Dry Dust Collectors (SWMU 11); Shot Blast Area (SWMU 5); Scrap Metal Storage Area (SWMU 4); the Foundry Sand Laundry Area (SWMU 6); the Wastewater Treatment Plant (SWMU 7); the Foundry Sand Tailings Area (SWMU 8); the Foundry Area (SWMU 9); and the Wet Dust Collectors (SWMU 12). The tour concluded at 12:29 p.m., after which the inspection team held an exit meeting with facility representatives. The VSI was completed and the inspection team left the facility at 12:40 p.m.

Photograph No. 1 Location: SWMU 1
Orientation: Southwest Date: July 24, 1992
Description: This is a photograph of the Oil Storage Area. Drums of enamel paint, waste lapping compound, waste soldering fluid, waste copper cyanide, and virgin products are stored in this area.

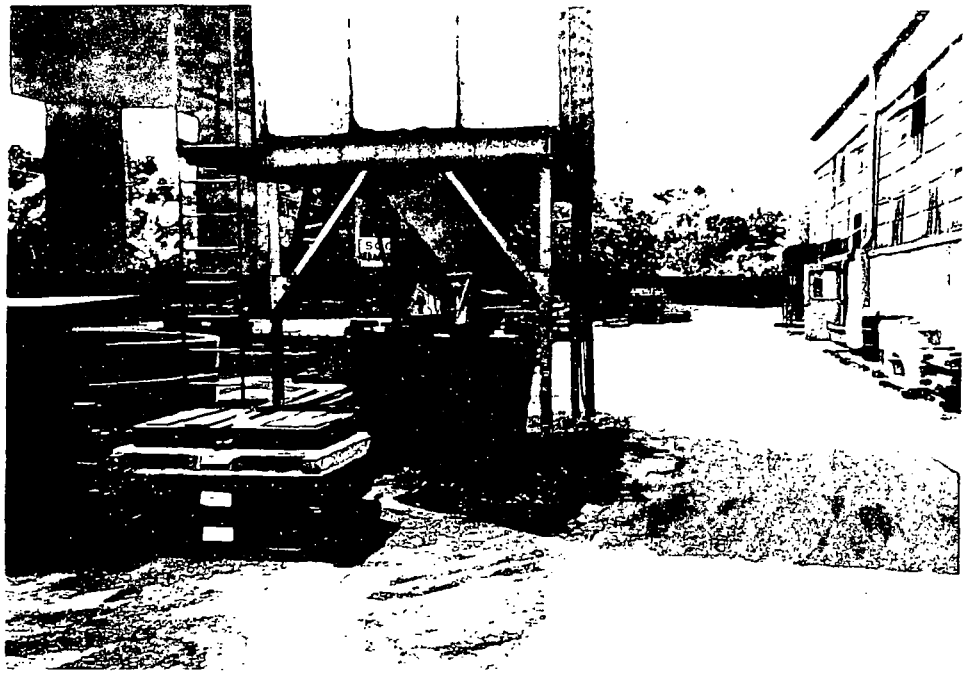


Photograph No. 2 Location: SWMU 2
Orientation: Southeast Date: July 24, 1992
Description: This is a photograph of one of the Scrap Metal Chip Storage Areas. The scrap metal from the machining operations is stored throughout the plant in metal roll off boxes like this one.

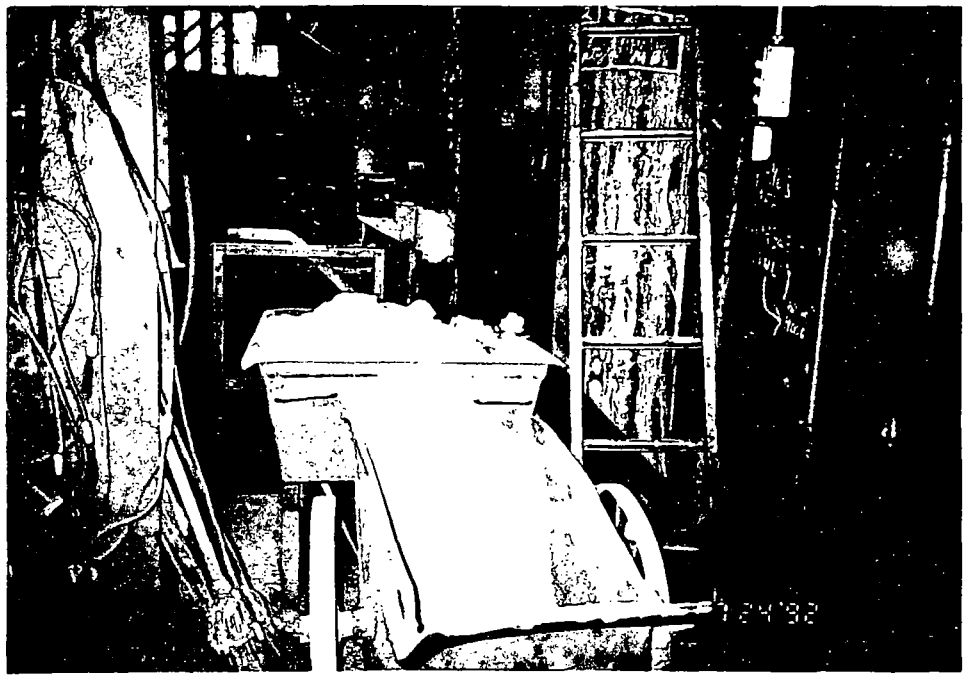


Photograph No. 3 Location: Spray Paint Booth
Orientation: Northeast Date: July 24, 1992
Description: This is a photograph of a paint booth in machine shop number 2. Note the paint filter attached to the back of the unit.

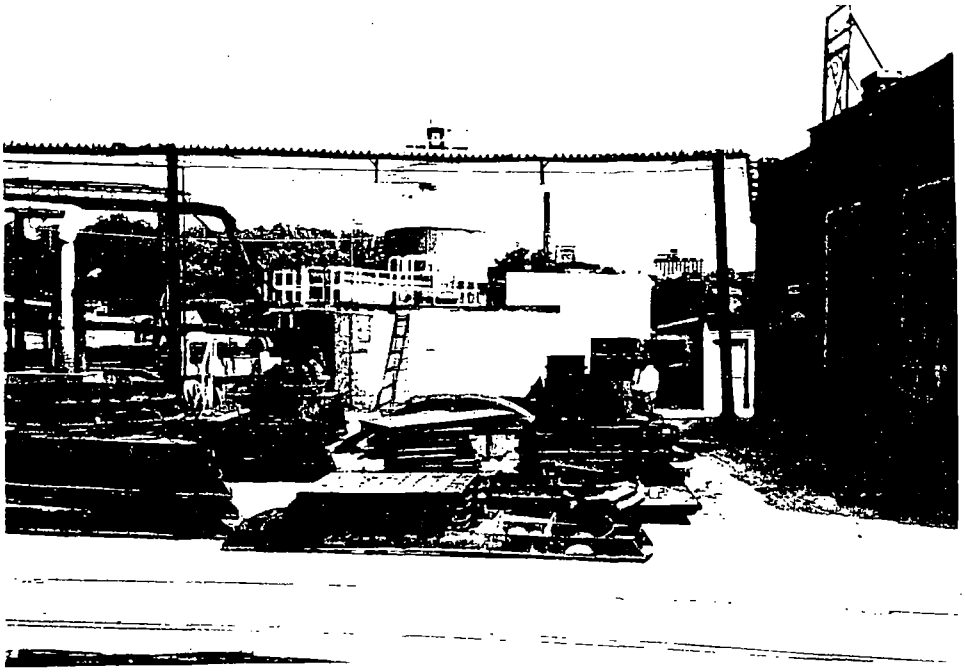
Photograph No. 4 Location: SWMU 4
Orientation: West Date: July 24, 1992
Description: This is a photograph of one of the Scrap Metal Storage Areas.



Photograph No. 5 Location: SWMU 11
Orientation: Southeast Date: July 24, 1992
Description: This is a photograph of one of the Dry Dust Collectors from shot blasting and waste shot blast.



Photograph No. 6 Location: SWMU 5
Orientation: South-southeast Date: July 24, 1992
Description: This is a photograph of one of the Shot Blast Storage Areas. Shot blast is stored in small metal bins.

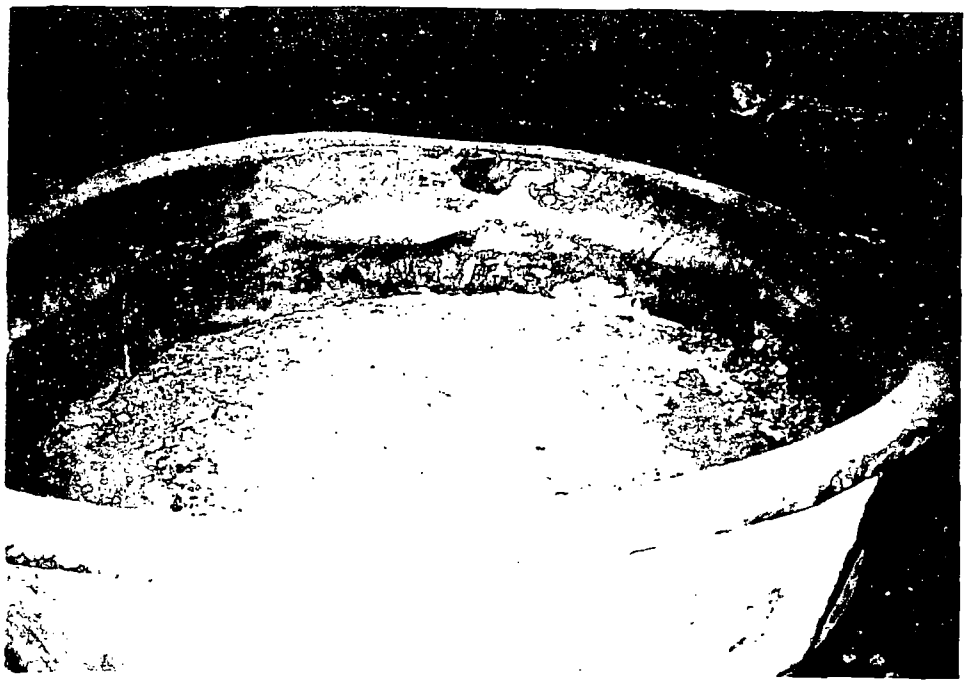


Photograph No. 7 Location: SWMU 7
Orientation: North Date: July 24, 1992
Description: This is a photograph of the Wastewater Treatment Plant. Metal forming for steel castings are stored south of the Wastewater Treatment Plant.

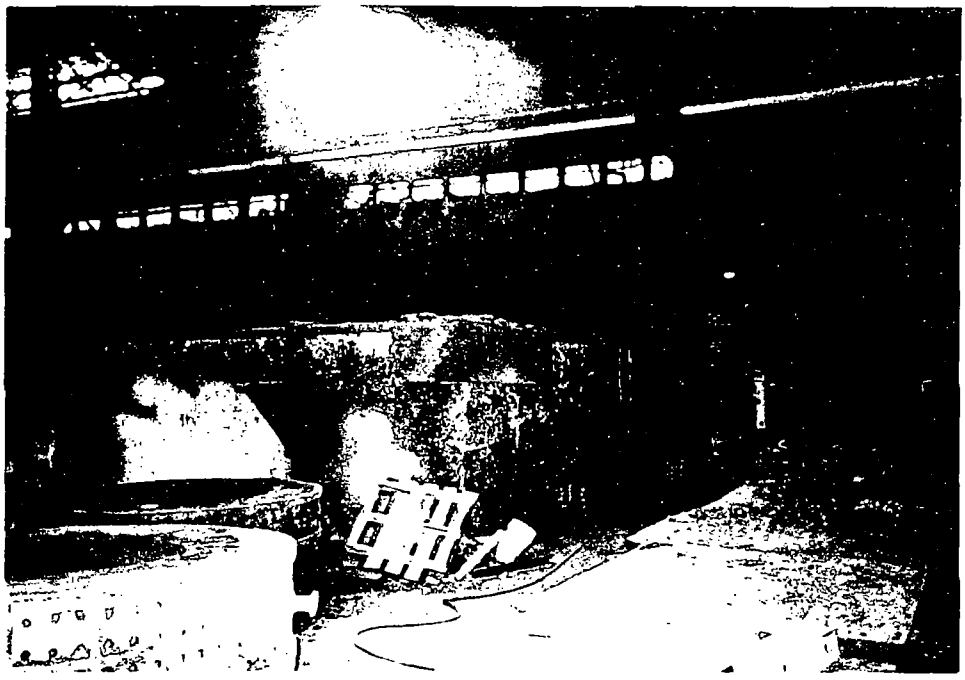
Photograph No. 8 Location: SWMU 8
Orientation: West Date: July 24, 1992
Description: This is a photograph of the Foundry Sand Tailings Area. The pile of waste foundry sand is about 2 by 15 feet.

Photograph No. 9 Location: SWMUs 7 and 8
Orientation: Northeast Date: July 24, 1992
Description: This is a photograph of the other Foundry Sand Tailings Area behind the 55-gallon drums in metal roll off containers. In the background is the Wastewater Treatment Plant (SWMU 7). The 55-gallon drums contain virgin baked resin.

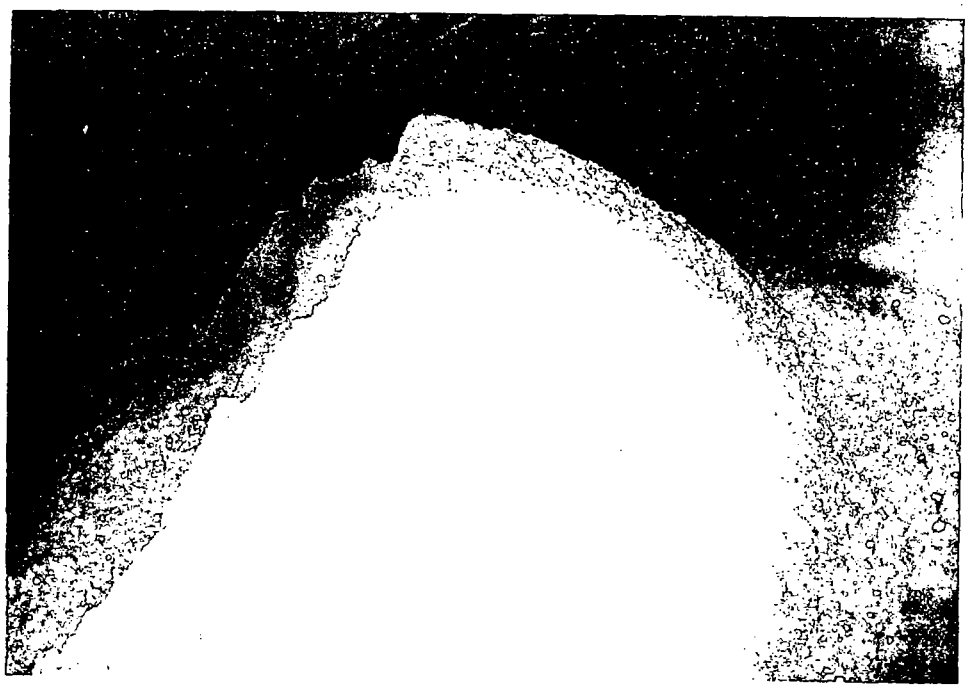
Photograph No. 10 Location: SWMU 9
Orientation: East Date: July 24, 1992
Description: This is a photograph of the Foundry Area, where waste foundry sand is stored in piles.



Photograph No. 11 Location: SWMU 9
Orientation: East-northeast Date: July 24, 1992
Description: This is a photograph of slag metal stored in the Foundry.

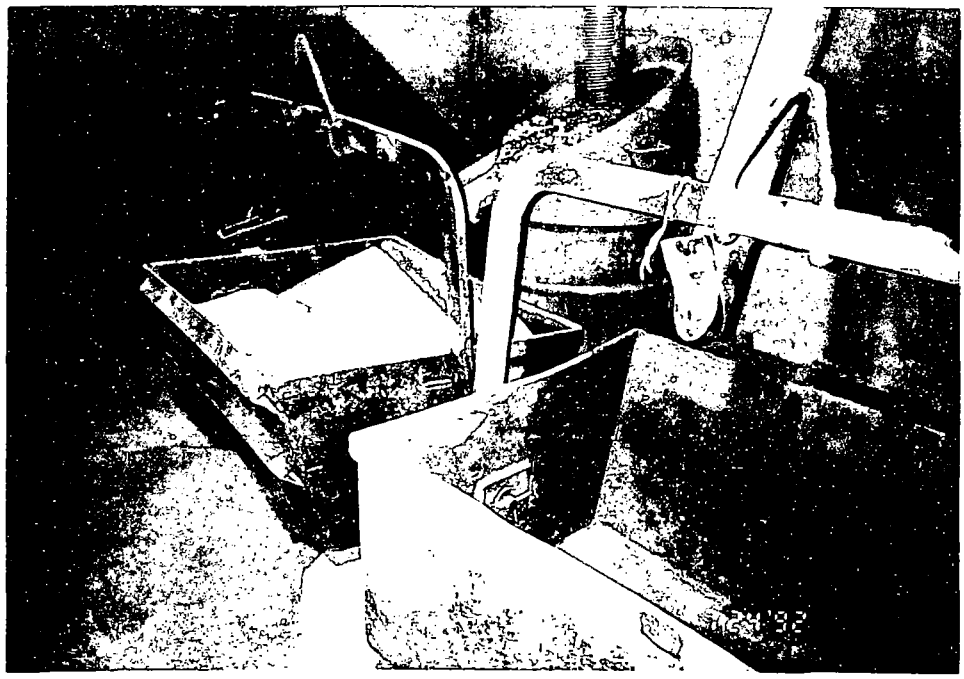


Photograph No. 12 Location: SWMU 9
Orientation: South-southeast Date: July 24, 1992
Description: This is a photograph of the waste foundry sand stored in a permanent metal storage box. The waste foundry sand will be transferred to the Foundry Sand Laundry Area (SWMU 6) for washing.



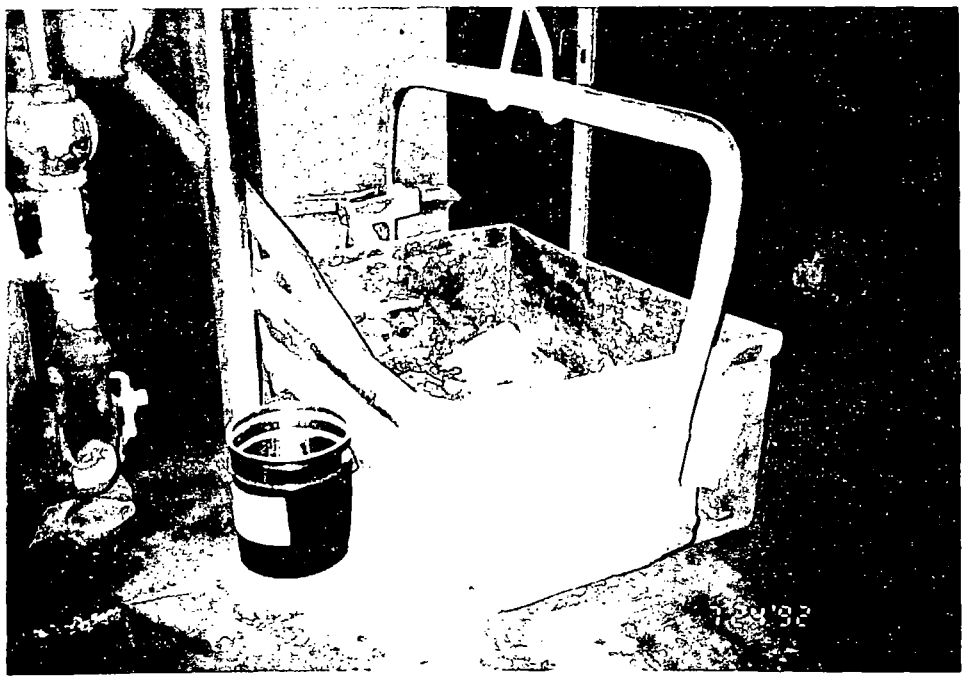
Photograph No. 13 Location: SWMU 9
Orientation: South-southeast Date: July 24, 1992
Description: This is a close-up photograph of waste foundry sand stored in a permanent storage box. See Photograph No. 12, also.

Photograph No. 14 Location: SWMU 9
Orientation: East Date: July 24, 1992
Description: This is a photograph taken from the west end of the Foundry. The waste foundry sand and debris, waste slag and skulls, scrap metal, and waste risers and gate cuttings are stored in a pile. A wet dust collector is located in the far left of the photograph.

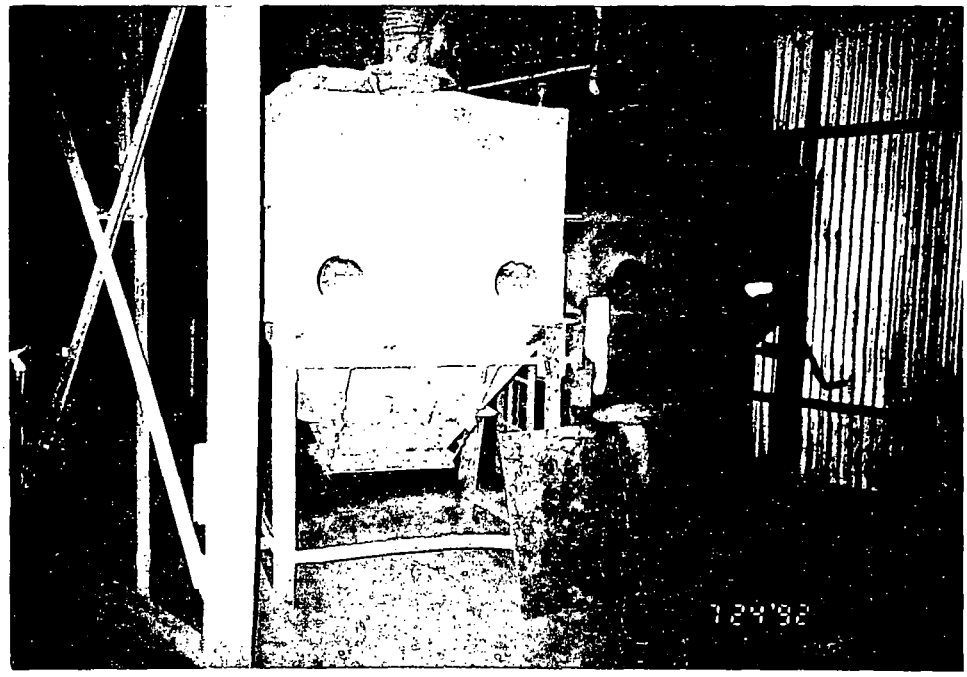


Photograph No. 15 Location: SWMUs 5 and 9
Orientation: Southwest Date: July 24, 1992
Description: This is a photograph of a Shot Blast Storage Area in the Foundry Area(SWMU 9). Waste shot blast has spilled onto the concrete floor in this area.

Photograph No. 16 Location: SWMU 4
Orientation: Northeast Date: July 24, 1992
Description: This is a photograph of a Scrap Metal Storage Area adjacent to the facility's melt shop operation. Scrap metal is stored in large bins.



Photograph No. 17 Location: SWMU 5
Orientation: Northeast Date: July 24, 1992
Description: This is a photograph of a Shot Blast Storage Area on the south central side of the Foundry Area (SWMU 9). Waste shot blast has spilled on the concrete floor.



Photograph No. 18 Location: SWMU 11
Orientation: South-southwest Date: July 24, 1992
Description: This is a photograph of two dry dust collectors on the south-central side of the Foundry Area (SWMU 9).

ATTACHMENT C
VISUAL SITE INSPECTION FIELD NOTES

0800 hrs 7-24-92

Folk Corporation
3001 W. Canal St.
Milw, WI
PA/VSI

To the North is Red Star Yeast
Also To the north of Folk is W. Canal Street and Hwy 94, to the east is Thiele Tanning & Soo Line Corp, Company & A.L. Gebhardt Tanning Co, To the west is MMSD a vacant lot and Milwaukee Water Treatment Facility, ~~third~~ West Port ~~Industry Inc. & Great Lakes Abatement Contractors~~ KEW 7-24-92

0830 hrs Meeting with faculty representatives Kenneth Fries, Don Panks and Jack Habrat. Discussed purpose of PA/VSI, There is a total of 1,051,528 square feet under roof

KEW

including foundry, mach. shop. office & weld shop.

1) Raw materials used for processes

a) Arc melting Process - charged, scrap metal (steel). Recycled back from machine shop Electric

b) Weld Shop - recycling scrap & plate cutting

c) Machine Shop

Other materials used
Ferro-Manganese metal
Chromium Ore
Nickel
Manganese

d) Heat Treat thru hardening & carburizing. Heat & Oil Quench Heat.

KEW

96 X

Natural gas & #6 fuel oil.
Laboratory is are physical testing only

2 PCB transformer on site. Scheduled out of service 1 this year and 1 next year.

Enamel Painting done

- Water treatment from Wet scrubbers (shakeout) and Sand Laundry where the Sand is reclaimed and reused.
- Silica Sand is used on site
- Additives used are a sodium silicate binder & is reactive with propylene carbonate hardener
- Degreasing & cleaning is done throughout the plant

KEW

97 X

Using mineral spirits and a blend with TCA & mineral spirits (85% TCA)

Foundry waste (Sand, spent refractory's, & slag, wet & dry dust collectors, sweepings) are sent to Falls land fill located on 13th & Rawson Ave. Transporter is United Commercial Transport, out of Salem, Wisconsin

Lubricants include grease, cutting oils and quench oils & coolants (semi synthetic oils).

All Scrap metal sent offsite is sent to Miller Compressing Some & small amount of work

KEW

with aluminum & brass parts that are machined on site.

Safety Clean Kleen removes paint water and other solvents.
Mil Solv takes mineral spirits & removes the solvents used in parts washer and there is no storage of solvents. Solvents are pumped and are not stored in drums.

2 USTs - 1 diesel and 1 (8000 gallon) unleaded gas (10000 gal) Tanks were installed in late 1987, Release detection Double wall tanks, cathodically protected & monitoring & mw around tank areas.

KEW

Piping on USTs is secondary lined. Steel tanks.
The material except that foundry sand was used for diking along Menomonee River & throughout the plant as fill material. The plant is 100 years. Falk has their own storm water collection system with 5 outfalls using pumps.
WPDES permit number # WI - 0001139 -3
CMC study for Chicago Milwaukee Corporation

0930 End discussion and start tour
51 acres total and about 1300 employees.

0941 Oil Storage Area.
Sloped floor sunken concrete floor, metal sides & metal on 3 sides. Small side open

KEW

Sealed Floor, No cracks in floor
Heat Sensors for fire detection to
alarm system, 4 water sanitor
Virgin materials KOH & Butyl cellosolve
cleaners, oils, lubri ants.
Drain Sump capture waste
& materials are attached to
anything. Unused virgin material also
PIC 1 SW exposure of CSA
(drum storage), Waste present
are enamel paints in 1 & 5 gallon
container are drained in 55 gallon drum,
Lapping compound, Soldering fluid
with $ZnCl_2$, heat treat waste
(Cyanide Copper), 1 & 5 gallon
cans & Lapping compounds
are not labeled with haz. or
non haz labels. Also stored
in 40 cy rolloffs are chips
going to miller compression &

KEW

trib to melt shop on west end
of CSA. Waste oil stored
outside. Oil recycler is
Benz oil & Rogers oil
also Chip buckets for scrap metal
are collected throughout the shop &
Machining operation of off each
machine.
Oil Dry is stored in drum
1000hrs. Cutting oil is used
to lubricate the cutting of gears,
& then flows into a trough &
is collected in a holding tank,
filtered and then recycled. Metal
chips are then put in chip
collection area.
1005 Chip Bucket for dry operations
PIC 2 Southeast Exposure
of Dry chip Storage Area 40cy

KEW

1013 Oily rags are exchanged by now over with Industrial towel & uniform

1016 Heating tanks (2) for #6 fuel oil are used. formally aboveground & below ground

1018 Into boiler room.
Boiler treatment chemicals (NaOH solution).
Power house consists of steam generators, AC/DC area & generators. No waste observed in this area

1028 Walked thru Maintenance Shop.
No sumps or AOC's identified
Heat treat oil & used oil w/ washwater on NW end of Maintenance Shop ~~to Motor~~ by Amber/Enviropro to Motor oils Refinery in McCook Illinois

KEW

Maintenance Shop generates various coolants and oils used in rolling & lathe turning

1036 Machine Shop #2 & 3

1037 hrs Into heat treat shop.
Heat is used to harden steel
Quench oil flows thru trenches to central storage area & is closed loop! 20,000 gal tank
Spent Refractory brick is sent to BFI East Troy, WI. Ceramic lined refractory bricks

1044 hrs Back to Maint Shops
Total of 90 parts washers on-site (supplied by Milsolv)

1044 hrs Paint booth operation.
Paint filters, filters put in solid waste dumpster & sent

KEW

to BFI

PIC 3 Paint booth filters changed on measurements on manometer. NE exposure Only potential source in shop. Lapping compound is a fine abrasive compd is used to make gears & polish tooth surfaces

1053 hrs. Visited Paint storage area No sources or AVCs noted

1058 hrs Weld Shop. Raw steel is cut using arc welder & is grinded down

1100 hrs PIC 4 Scrap metal from Weld Shop shot is recycled (Work exposure) KEW

and sent back to foundry

1103 hrs. Paint booth area where filters are used to collect enamel paint Shot blast is used to rough finish parts & grind parts (sand)

1106 hrs Paint Storage area on East side of Weld Shop is locked. No odor

1108 hrs Dust collector from table blast operation (shot blast)

PIC 5 SE exposure - table blast dust storage collection. This material goes w/ foundry sand to land fill. Area from table blast area

1112 hrs Shot blast storage in Weld area

KEW

PIC 6 of shot blast storage Area next to shot blast room. Concrete floor. No cracks visible. Air emission control includes collector for waste dust

1117 hrs Into Foundry area by Door exit and Storage of metal forms
- Walk through in Carpenter Shop
No AOC's or SWMU's in this area

1118 hrs PIC 7 Picture (North) of Wastewater treatment Area all of wet scrubber & laundry water Sludge from this operation is mixed with sand & polymer & other materials to solidify and

then it is sent to landfill

1124 hrs PIC 8 of Gycles system sand from the casting process that goes to laundry cleaning area. (Laundry tailings) Asphalt Floor. No release controls. except brick wall on one side. NO drains by this area but there are 2 manholes by this area (closed) one is open to sewer system that goes to treatment process

1128 hrs. NO Baker Perkins Resins Raw material is stored outside temporary

Stand of gravel area. No release controls. Storm sewer drain next to this area. A few drums do not have bung holes & drum are rusted

1131 hrs PICA NE exposure. Turnings from Laundry Area are swept up and put in small 2 cy containers. No release controls present. On gravel parking area with drums of resins

11:33 hrs Sodium Silicate storage (Raw material)

Mixer area is used & conveyer sand, sodium silicate

KEW

Propane Carbonator. Waste is generated which is shown in PIC A. Foundry sand mixture!

1138 hrs Foundry Sand Waste PIC 10 East Exposure shielded from spent castings. Sunken Concrete floor is only release area. NO cracks in concrete noted. White Stone is ~~is sodium silicate stone~~ new waste

1142 hrs Slag Box (3-4 in the oil & sand Area)

PIC 11 NE-E exposure of Slag in metal box. Concrete floor. No cracks in Concrete

KEW

1143 hrs Foundry sand visible is stored in separate areas in the foundry

1148 hrs PIC 12 Shakeout sand storage before it goes to foundry cleaning area is in foundry. Cracks in concrete floor is only relevant to

1151 hrs PIC 13 closeup of shakeout sand storage area

1201 hrs PIC 14 Facing shot of foundry area. Note sand on concrete floor & castings laying all over

1206 hrs Shot blast area on west end is used to clean & blast metal parts & castings. A dust is generated from this area

KEW

1207 PIC 15 of dust from shot blast area on west end of foundry

1208 hrs Melt Shop from Scrap Metal stored

1210 hrs PIC 16 of Scrap metal Storage Area before it is put back in melting operation

1213 hrs There is a hole by charging bucket that may present an OSHA hazard Melt Running area has numerous amounts of metal in the bottom of a 22' pit Cresucel in production is Ferric Chromium (Fe Cr There are 5 ton & 50 ton melting furnaces.

1221 hrs Shot blast work area

KEW

from the #11 dust blast area.
PIC 17. Cracks in concrete
floor. Blast Shroud in open
top metal bucket, air
filter related controls,

1223 hrs PIC 18 Dust control
collection area for dust (hopper).
Blast area (#11) & cleanup
vacuum for this area, Cracks in
concrete floor. Baghouse collection
areas are on roof; Storm sewer
manhole area 7 feet from
blast cabinet,

1229 hrs. Phenolic based resins were
discontinued about 1980-1981.
Green Sand (foundry) was
discontinued in 1986-1987

KEW

1235 Rawson Avenue Landfill
13th Ave & Rawson
South Milw., WI
WDNR Permit No. 1882
Falk has been part of Sandstrand
since 1970. Exit meeting
with Falk representatives
1240 hrs back to Office. End Visit

Thomas P. Wolf
7-24-92

KEW

(30)

PA/VSI:

Falk Corporation

Milwaukee, WI

July 24, 1992

8:15 am Kurt Wehrman

Trent Schuler

checked into Falk.

Facility had us sign

safety information

8:25 Facility reps:

Don Paulus, Env. Eng

Ken Fries, Env

Jack Hubiak, Env Eng / Plant Eng

8:30 We started began meeting

meeting room above machine shop.

Don Paulus provided (31)

us with a facility layout

map. Space information.

Discussed various EPA ID

numbers for Area Falk facilities.

Facility provided materials

& flow diagram

Facility processes:

Input of charged steel

from recycled scrap.

from machine shop

scrap yards.

All into MELT SHOP

see map

(32)

Incoming raw materials:

Crome

Ferrous Manganite

Manganese

Nickel

* Furnace is electric Arc.

5 ton 7' dia

50 ton 0' dia

Heat Treating

Through Hardening

Carburizing

water quenched

oil quenched

Boiler is fired by natural gas

Laboratorys are physical testing labs.

(33)

Two PCB Transformer will go out of service within 2 years.

* Enamel Painting

Water Treatment Fan wet scrubbers

Sand Washing - separate fines to reuse sand.

- silica Sand.

Sodium Silicate Binder.

reacted w/ propylene carbonate hardener.

(39) Parts washers w/ mineral spirits throughout machine shop.

Weld shop: 25% TCE & mineral spirits

Disposal of Foundry sand
spent refractories
Collection from wet & dry dust collectors
Slag from Melt & weld shop

Trans. - United Coastal Transport Salem, WI

Oils lubricants grease
Quench
Coolants - emulsified oils.
Cutting

Melt in Furnace (35)
Pour
Shake out sand
Riser cuttings
Arc Air
Finished Castings

Excess Scrap Goes to Miller Compressing

Small amount of non-ferrous metals. The scraps from these are kept seperate.

We explained the report writing process. We explained some of the positions of EPA as far as us making recommendations. We

(36)

cannot make judgements
tell them about AOC or
deficiencies that we see.

Miscolv. removes mineral
spirits and recycles.
Safety Kleen removes Paint
Wastes

Miscolv has drum out service
exchange dirty for
clean & recycle dirty.

Safety-Kleen was on site
~ 3 yrs. ago

2 UST's 1987
Diesel
Gasoline

UST were

(37)

Double Walled Tanks
Cathodic Protection
Monitoring Wells.
Piping has secondary walls.
size gas - 1,000
Diesel - 8,000
steel.

No monitoring wells other
than those by UST's.

Facility maintains own
storm sewer system. System
pumps over wall. Pumps
are shut off in event
of spill.

58

4:30 Begin Plant Tour.

51 Acres
1300 employees

SW corner of property
former HW Storage
Tiny closure facility has under improvements
8 in curb around
4 heat sensors to alarm at gate

Area stores virgin materia

Concrete floor
Expansion Joints are sealed

59

Everything is pitched toward Sump. Sump does not go anywhere just for collection

4:45 Pit 1 SW
Former DSA
currently, stored <90 days

Paints Accumulated in buckets
~10-55-gallon drums/year

lapping compound (solid waste)
soldering fluid

Unused virgin products

(40)

One unknown waste

labeled copper granule

Some residential waste accumulates from employees

Virgin products

Mostly various Grades of oil

Two Dumpsters east of DSA. N. dumpster chips for Miller Comp.

S. dumpster back to Melt shop

Waste Oil recycled by Benz Oil.

Volumes of waste Oil to be provided.

9:55 left DSA to Bldg No. 4 (Machining

Lubrication crew collects waste oil.

10:00 Giant Gear Machining.

Oil drains completely and coolant system chips are filtered out oil is reused or waste recycled.

Oily chips go to Miller compressing.

Chips are regularly sent to melting every 2 weeks depending on room

~ 3/4 on yd. dumpster

(41)

(42)

10:07 Pit No. 2 5

Chip accumulation dumpsters

left shop No. 4

Solid Waste:
Compacted By BFI
Landfilled.

Empty
Corrosive Drums located in abandoned building (Lumber Shop)

Located in Pattern shop
In

10:15 Boiler Room

(43)

Spill response Wagon

Power House
Heat
AC/DC Gear Generation for large Gears.
Air compressor

10:22 Old Equipment Room
Above Power House

Left Power house to shop 1.

Sand Washing & sort proofing area.

Amber oil/ Environmental takes to Motor oil refinery in McCook, IL.

(64)

Only generates wastes when tanks are cleaned.

Waste o/l 55 — gallon drums are labeled in plant. Collect Waste O/l transfer to DSA

10:35 Popped into heat Treating Trenches in floor drain Quench o/l to sump

All Quench o/l is stored 20,000 gallon upright steel tank.

(65)

Facility uses ceramic refractory Bricks

Mineral has ~ 90 wt% of mineral spirits.

Paint Area
Enamel
Filters are removed when manometer reaches differential pressure

Paint Storage
Fire proof
Explosion Proof.
Sprinklers.

(6)

10:55 Entered Weld Shop
NE. corner
Pict of NE scrap accumulation
of waste steel.
This waste is taken
to Melt shop.

11:00 Another Painting area
Center of weld shop

Paint Storage Room
Explosion Rating Dust

11:05 Dust Collectors
Dust is mixed w/
Foundry sand & sent to
Landfill
Shot Blast knocks scale
off of parts.

(47)

1:17 Exit Weld shop.
Through carpenter's
shop.
WWTP.

Incoming line is from
balcony sand laundry
water from Dust collector systems
Discharge to No 5.
Sludge is pumped out
mixed with sand
to landfill.
polymer is added to solidify
material.

(48)

11:20 Sweepings Picture taken
Pict No. 6 W.
Blow down from curby's
process.

Also we saw area where
excess sand accumulates
more incidental accumulation
sand + spread in roads
along asphalt.

D.S.A W. Raw material Paste
Not Really DSA. Sand
waste is out here because
Foundry is in shut down
& undergoing cleaning.

Sweepings Buckets (49)
are outside near
WWT. 4x4 buckets

Pict. No. 7
N. Sweepings accumulate
buckets.

11:20 Into Foundry Building

At the end of the day
machines are freed of
raw materials,
Sand is mixed with propylene
carbonate waste is queried
sent out for
Every day this is calibrated

(50)

11:37 Pict 8. Foundry Sand accumulation — Rat area
Floor of this area is

Slag Box
3 or 4 around.
Some have molten metal

Pict 9 NE
Slag Box.

11:45 We saw pit areas where large [illegible] are [illegible]

Shake out sand.
Pict 12 Shake out sand
SE
Pict 13 looking down E
[illegible] Shake out Sand Box

Pict 14 east (51)
Overview shot of Foundry.

Waste From Shot Blast of E. Foundry is handled in Skip Buckets

12:05 Pict 15 Shot Blast waste

11:06 Left Foundry to Melt Shop.

12:07 Pict 16 East
looking into Melt Shop
Storage Bin

12:10 looked at Furnaces ~~[illegible] ±50 to~~ operation

(52) Left melt shop to east shot blast

12:20. Pict No. 17
No. 11 shot Blast.
Shot Blast Work
Bucket
North.

Pict 18 SW
one are
Picture of shot
blast Bag houses. hoppers.
these are taken to 12:42
WWTP to mix w sludge.

Polyphenol resins operations (53) discontinued in ~80 or 81

Green Sand operations discontinued in ~'86 or '87.

Ransom Ave & 13th is
Land fill
Permitted by WDNR 1882

Falk was purchased in 1970s
Wholly owned subsidiary
of Sumitomo.
We conducted an exit
meeting. We received removal
facility maps - Left.

Kurt Shull